EEI BULLETIN

1960 Convention Issue

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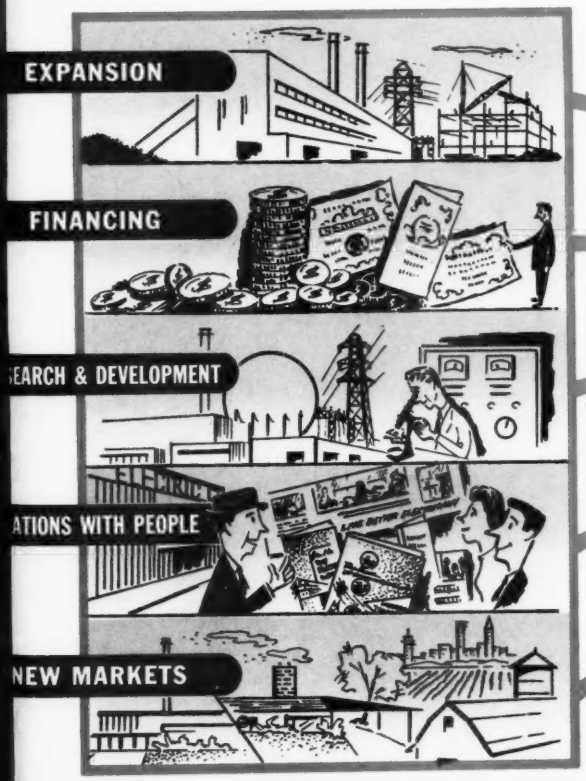
GEOGRAPHY & INDUSTRY

LEADING THE WORLD IN ELECTRIC POWER

The American Way



• JUNE 1960 •

PUBLISHED BY EDISON ELECTRIC INSTITUTE

ELECTRIC UTILITY INDUSTRY Statistics IN THE UNITED STATES

for MARCH 1960

Current Statistical Data Covering 100 Percent of Industry

(Includes Investor-Owned Companies, Cooperatives, and Government-Owned Utilities) — March, 1960

	1960	1959	%
SOURCE AND DISPOSAL OF ENERGY			
NET GENERATION* (Kwhr in Thousands)			
By Fuel Burning Plants	51,011,963	46,326,740	+10.1
By Water Power Plants	13,289,082	12,024,820	+10.5
Total Generation	**64,301,045**	**58,351,560**	**+10.2**
Add—Net Imports Over International Boundaries	303,150	260,182	+16.5
Less—Company Use	196,531	175,410	+12.0
Less—Energy Used by Producer	2,056,558	1,472,981	+39.6
Net Energy for Distribution	**62,351,106**	**56,963,351**	**+ 9.5**
Lost and Unaccounted for	6,386,524	5,536,725	+15.3
Sales to Ultimate Customers	**55,964,582**	**51,426,626**	**+ 8.8**
CLASSIFICATION OF SALES			
NUMBER OF CUSTOMERS—As of March 31			
Residential or Domestic	49,188,181	48,013,306	+ 2.4
Rural (Distinct Rural Rates)	1,579,191	1,622,586	− 2.7
Commercial or Industrial:			
Small Light and Power	6,341,984	6,259,351**	+ 1.3
Large Light and Power	339,888	340,481**	− 0.2
Other Customers	196,477	189,490	+ 3.7
Total Ultimate Customers	**57,645,721**	**56,425,214**	**+ 2.2**
KILOWATT-HOUR SALES—During Month of March (Kwhr in Thousands)			
Residential or Domestic	16,746,324	14,847,660	+12.8
Rural (Distinct Rural Rates)	941,021	920,874	+ 2.2
Commercial or Industrial:			
Small Light and Power	8,800,834	8,070,438**	+ 9.1
Large Light and Power	27,124,397	25,530,770**	+ 6.2
Street and Highway Lighting	532,157	497,356	+ 7.0
Other Public Authorities	1,308,720	1,166,713	+12.2
Railroads and Railways	467,767	332,555	+40.7
Interdepartmental	43,362	60,260	−28.0
Total to Ultimate Customers	**55,964,582**	**51,426,626**	**+ 8.8**
Revenue from Ultimate Customers (Thousands)	**$929,481**	**$858,995**	**+ 8.2**
RESIDENTIAL OR DOMESTIC SERVICE			
AVERAGE CUSTOMER DATA—For 12 months ended March 31, 1960			
Kilowatt-hours per Customer	3,647	3,417	+ 6.7
Average Annual Bill	$90.81	$86.11	+ 5.5
Revenue per Kilowatt-hour	2.49¢	2.52¢	− 1.2

* By courtesy of the Federal Power Commission.
** Revised for comparison purposes.

EEI BULLETIN

Vol. 28 • No. 6

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The EDISON ELECTRIC INSTITUTE BULLETIN is published monthly, except bi-monthly in July and August, by the Edison Electric Institute, an association of electric light and power companies in the United States and its territorial possessions. Its affiliate members consist of private electric utilities in North, Central and South America and contiguous islands in the Western Hemisphere.

The objectives of the Edison Electric Institute are:

The advancement in the public service of the art of producing, transmitting, and distributing electricity and the promotion of scientific research in such field.

The ascertainment and making available to the members and the public of factual information, data, and statistics relating to the electric industry.

To aid its operating company members to generate and sell electric energy at the lowest possible price commensurate with safe and adequate service, giving due regard to the interests of consumer, investor, and employee.

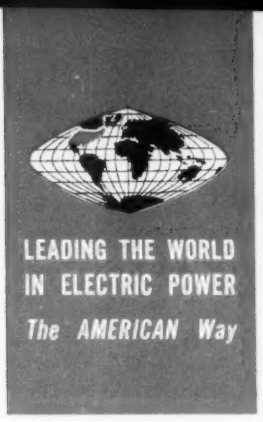
Closing date for the BULLETIN is the tenth of the month preceding the month of issue.

Manuscripts and correspondence relating to the BULLETIN should be addressed to the Editor, Edison Electric Institute, 750 Third Ave., New York 17, N. Y.

The Edison Electric Institute does not assume responsibility for, nor necessarily endorse or approve, statements made by contributors to the BULLETIN.

Subscription price of the BULLETIN is $3.00 per year in the United States; $4.00 per year in foreign countries. Second-class postage paid at Philadelphia, Pa. Publication office, 56th and Chestnut Sts., Philadelphia 39, Pa. Editorial office, 750 Third Ave., New York 17, N. Y.

SHERMAN R. KNAPP
Newly Elected President
of the Edison Electric Institute



EEI Convention Focuses Attention on:

- *Expansion Programs*
- *Financing*
- *Research and Development*
- *Relations with People*
- *New Markets*

UNDER the theme, "Leading the World in Electric Power—the American Way," the 28th Annual EEI Convention in Atlantic City, N. J., June 6-8, emphasized five subjects of vital importance to the continued growth of the investor-owned electric utility industry during the next 10 to 20 years: the expansion program to meet the needs of the nation; financing this expansion program; research and development; relations with people—customers, employees and stockholders—and new markets.

$100 Million in Advertising

In a pre-convention press conference, EEI President Allen S. King estimated that total residential advertising and promotional programs of the electric utility companies, the electrical manufacturers and their allies this year will amount to more than $100 million. With increased sales efforts, multiplying the demand for electricity, Mr. King predicted that the use of electricity will continue in the future at the rate of the past. This would mean that the power producing capability of the nation's electric companies will double by 1970 and again by 1980, bringing increased service, production, comfort and leisure to the people of our country.

"We in the electric industry can see increasing sales efforts," Mr. King said. "We can predict, with some accuracy, the growing demand for electricity. We can predict, too, the growth in power-producing capability that will be needed to meet the increasing demand. We can, in other words, see the future in broad strokes. But we cannot foresee the thousands of new ways electricity will serve us. We cannot imagine the effect that all-electric living will someday have on our nation, in our homes, and in our own lives. We only know that the number of ways in which electricity will be serving the American public will continue to multiply."

In the opening address of the convention, Mr. King urged electric companies to tell the facts about themselves, the electric industry and the American economic system "along the Main Streets and rural routes of the nation." He said that electric companies should identify themselves clearly as business organizations operating in the free enterprise tradition.

"We must give emphasis in telling the story to what we are doing for people now and what we will be doing to meet individual, community and national needs in the future," the Institute President declared. Earlier this year Mr. King made public an EEI study indicating that by 1980 electric company power-producing capability can be expected to reach more than 492 million kw, nearly four times today's total. Total electric company energy output is expected to reach nearly 2.3 trillion kilowatt-hours by 1980, again four times today's total.

"Based on accepted energy equivalents, the electricity we use today is estimated to equal the energy of more than 67 men working for every single one of us," Mr. King told the convention. "By 1980 each of us will have the equivalent energy of more than 176 men."

A Dramatic Example

Mr. King described the story of what the electric industry is doing, and is going to do, as a dramatic and exciting example of the effectiveness of a free economic system. "There are some people who say that the job of supplying electricity to the country in

(*Continued on page* 165)

New Members of the EEI Board of Directors

HARLLEE BRANCH, JR.
President,
The Southern Co.

H. J. CADWELL
President, Western Massachusetts Electric Co.

T. G. DIGNAN
President, Boston Edison Co.

R. H. FITE
President, Florida Power & Light Co.

J. K. HORTON
President, Southern California Edison Co.

A. S. KING
President, Northern States Power Co.

M. S. LUTHRINGER
President, Central Illinois Public Service Co.

P. B. MCKEE
Chairman, Pacific Power & Light Co.

D. H. MITCHELL
President, Northern Indiana Public Service Co.

R. G. RINCLIFFE
President, Philadelphia Electric Co.

W. H. SAMMIS
President,
Ohio Edison Co.

W. O. TURNER
Chairman, Louisiana Power & Light Co.

J. H. WARD
President, Commonwealth Edison Co.

T. H. WHARTON
President, Houston Lighting & Power Co.

E. H. WILL
Chairman, Virginia Electric & Power Co.

(*Continued from page* 163)

the future is too big for industry so the government must do it . . . The job is *so big* that free enterprise must continue to do it, not government," he asserted.

Mr. King told a record-breaking 3491 electric light and power company representatives and their guests that the future of the American electric industry and the future of all the 'Main Streets' and rural routes of this country are inextricably united. "Our free way of life will continue as long as we are able to maintain our free economic system, limit the role of government, and maintain the electric utility industry as a part of American free enterprise," Mr. King declared.

This was one of the most informative of all EEI conventions. Authoritative speakers from within and outside the industry looked squarely at problems and opportunities facing the industry now, and those which may be expected to arise within the next decades. A major consideration which was discussed in a panel presentation concerned the raising of an estimated $143 billion needed to quadruple the industry's capability by 1980.

The well-balanced program also focused attention on the following subjects:

- Rural electrification—with a realistic appraisal of the roles of electric companies and co-ops in serving rural America.
- Live Better Electrically program, with the many innovations and developments in the new fields of electric promotion.
- The contribution of electric power to the future of mankind.
- Electric heat and the part it will play in the overall market of the 1960's.
- Private enterprise and public service in a free society.
- The role of research in the industry.
- "Hard-head" engineering—its place in the electric industry; what it has done and can do.
- The country's power supply systems of today and the future.
- Management's responsibility for safety.
- Public, employee and stockholder relations.

Sherman R. Knapp, President of The Connecticut Light & Power Co., was elected President of EEI for the 1960-61 administrative year, succeeding Mr. King.

In accepting the Presidency of the Institute, Mr. Knapp noted that the position as chief of EEI is two-fold—"to stimulate our internal housekeeping" and "find ways and means of making a favorable imprint of our industry on the minds of a largely disinterested and apathetic public."

The new President, calling the greatest threat to

(*Continued on page* 167)

Sherman R. Knapp Elected President of Edison Electric Institute

SHERMAN R. KNAPP, President of The Connecticut Light & Power Co., was elected President of the Edison Electric Institute by its Board of Directors. Installation of the new President was made June 8 at the closing session of the Institute's 28th Annual Convention in Atlantic City, N. J.

Succeeds King

Vice President of the Institute since last June, Mr. Knapp succeeds Allen S. King, President of Northern States Power Co.

Mr. Knapp has been President and a director of Connecticut Light & Power since 1952. He joined the company in 1928 upon graduation from Cornell University. He served as an engineer in the Operating and Sales Departments until 1937, when he was made manager of the New Milford District. In 1941 he became assistant to the sales vice president and he was named assistant to the president in 1948. In 1949 Mr. Knapp was elected executive vice president.

He is a vice president and a director of Yankee Atomic Electric Co., which is owned by a group of 11 New England utilities, joined together to construct the area's first atomic electric power plant.

Mr. Knapp has been a member of the EEI Board of Directors and served on a number of Institute committees, including the General Division Executive Committee. He has served as president of the New England Gas Association and the Electric Council of New England. He is presently a director of the National Association of Manufacturers and a member of the National Industrial Conference Board and the National Planning Association. He served as chairman of the Connecticut Flood Recovery Committee following the floods of 1955.

Other Activities

He serves as a director of the Connecticut Bank and Trust Co., the Emhart Manufacturing Co., the Hartford Accident and Indemnity Co., the Hartford Fire Insurance Co., the Hartford Steam Boiler Inspection and Insurance Co., and Scovill Manufacturing Co. He is also a trustee of Connecticut College and a director of ACTION, Inc.

Remarks of Sherman R. Knapp in Accepting Presidency of the Edison Electric Institute

THE Presidency of the Edison Electric Institute carries with it responsibility and opportunity, as well as honor. In undertaking this most important office in our industry I hope I may be able to fulfill the responsibility, to take advantage of the opportunity, and thereby justify the honor. Obviously, these objectives can only be achieved with the cooperation and help of the Institute staff and the Board of Directors on which I am sure I can count.

With the advent of the decade of the Sixties, we have been concerned of late with meeting America's future power needs. We, in the industry, have no serious qualms about our ability to handle this job adequately and efficiently, but we will need to use ingenuity in telling this story to the public. I believe a tougher problem will be maintaining enough pressure on the sales front to assure the load growth that is predicted for the next 10 and 20 years.

President's Job Is Twofold

The job of being President of EEI, as I see it, is at least twofold: first, stimulate our internal housekeeping and second, find ways and means of making a favorable imprint of our industry on the minds of a largely disinterested and apathetic public. In the first category there are innumerable tasks in the works at all levels, most of which are moving along quite satisfactorily. One of these, for instance, which isn't accompanied by too much flag waving but which nevertheless is producing substantial improvements in our operations, is the use of electronic computers in all phases of our paper work. I would like to pay tribute to the largely unsung toilers in the vineyard who are preparing the programs which become the brains of these robots. Another major undertaking which is constantly developing, but which seldom makes the headlines, is the distribution of electric service along the streets and highways of America in ever-increasing quantities. We hear much more about progress in the field of generation and transmission, but I suspect that more engineering man-hours are chewed up in the distribution end than any other. All of these activities, of course, are well-represented in the committee structure of EEI and, if EEI did nothing more than provide the framework for the function of industry committees, its existence would be fully justified.

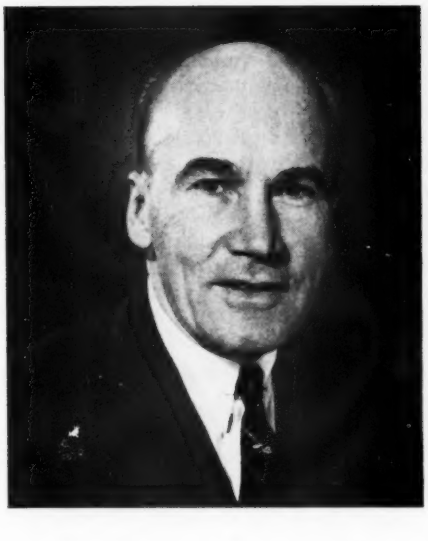
Although the responsibility for our industry image perhaps falls more directly on NAEC, ECAP and PIP, EEI cannot avoid playing an important part in this field. EEI is recognized by those segments of the public which are concerned with the electric industry as a reliable source of statistics and basic information. It also serves as a stimulant to individual members to engage in programs at the local level, which will help to produce a better understanding of our objectives, our accomplishments and our problems. It is regrettable in the eyes of many in our industry that we are not so constituted that we can have an industry spokesman who could promptly and effectively answer attacks on us from those whose objective is the nationalization of the electric power business. The Edison Electric Institute, however, is in a position to set the record straight when reckless and misleading statements are made about us and I believe we should not be timid in speaking out when such a course is indicated.

Many utility people feel that we would be in a better position if EEI, NAEC, ECAP and PIP were merged into one organization. As is the case with about 45 percent of the investor-owned industry, my company belongs to all four of these organizations and we actively participate in the work of each. Based on our experience, I feel that the present setup gives us more flexibility and more inspiration to progressive activity than would be the case with only one organization. EEI presently represents about 97 percent of the electric utility industry. The other three national organizations range from 77 percent down to 54 percent of industry representation. I am sure that all of us, individually and collectively, would gain from more solid support. Allen King has pointed out very effectively during the past year that our major field of activity in public relations is Main Street back home. We mustn't forget that, but I hope that you take advantage of the help that our national industry groups can be in this direction.

The Greatest Threat

The greatest threat to our industry continues to be subsidized competition from governmental power undertakings and the major handicap in meeting this threat is tax inequality. We have no quarrel with the idea that the electric bill is a reasonable and convenient device for collecting taxes to support local, state and Federal governments. We justifiably contend, however, that everyone who pays an electric bill should make a proportionate contribution to the support of government. About 20 percent of all users of electricity in this country use power subsidized by government and contribute little or nothing toward the general support of government. The dollar amount of this loss last year is estimated at $618,000,000. The customers of investor-owned utilities provided $2,166-000,000 in 1959 in taxes to local, state and Federal governments. These figures indicate the magnitude of the inequity which exists in the present tax structure. It is my hope that during the coming year substantial progress can be made in correcting this situation and I intend to make this a primary objective during my term of office.

Philip A. Fleger Elected Vice President of EEI



PHILIP A. FLEGER, Chairman of the Board and President of Duquesne Light Co., has been elected Vice President of Edison Electric Institute.

After graduating from the law school at the University of West Virginia in 1926, Mr. Fleger joined the Philadelphia Co. system, of which Duquesne Light was a part. He was advanced to general attorney of Philadelphia Co. in 1939, elected vice president in 1940, senior vice president in 1942 and executive vice president in 1946.

Mr. Fleger has been chairman of the board and chief executive officer of Duquesne Light since 1950. He is a director of the Edison Electric Institute and has been for the past year Chairman of the EEI General Division Executive Committee. He is also a member of the Executive Committee of the Association of Edison Illuminating Companies and is a former member of the EEI Advisory Committee.

In 1956 he received the Duquesne University Award for Leadership in Management. A year later he received the Pittsburgh Junior Chamber of Commerce Award as Man of the Year in Business.

Last year Mr. Fleger received the award of the Western Pennsylvania Chapter of the Society of Industrial Realtors as Western Pennsylvania's outstanding industrialist for 1959.

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the industry subsidized competition from governmental power undertakings, said the major handicap in meeting this threat is tax inequality.

20 Percent Use Subsidized Power

"About 20 per cent of all users of electricity in this country use power subsidized by government and contribute little or nothing toward the general support of government," Mr. Knapp declared. "The dollar amount of this loss last year is estimated at $618 million. The customers of investor-owned utilities provided $2,166 million in 1959 in taxes to local, state and Federal governments."

Declaring that these figures indicate the magnitude of the inequity which exists in the present tax structure, Mr. Knapp told the convention that "it is my hope that during the coming year substantial progress can be made in correcting this situation and I intend to make this a primary objective during my term."

Other New Executives

Philip A. Fleger, Chairman of the Board and President of Duquesne Light Co., was elected Vice President of the Institute, and H. S. Sutton, Treasurer of Consolidated Edison Co. of New York, Inc., was re-elected EEI Treasurer. Fifteen member company executives were named to the Institute's Board of Directors for three-year terms. Edwin Vennard was re-elected Vice President and Managing Director, and A. B. Morgan and re-elected Secretary and Assistant Managing Director of Edison Electric Institute.

The second annual presentation of the Edison Award, the electric industry's highest honor, was made June 8 to Commonwealth Edison Co for "enlightened, significant contribution toward the development of economic nuclear power" in the completion and operation of the Dresden Nuclear Power Station, the nation's first large privately financed atomic power plant. The award also was given in recognition of the company's "outstanding efforts in the promotion of low-cost residential electric space heating." Mr. King presented the award to Willis Gale, Chairman of Commonwealth Edison.

The EEI Board presented a citation to Thomas W. Martin, Chairman of the Board of Alabama Power Co., for his "outstanding contributions to the electric power industry, and to the industrial, civic, cultural and human welfare of Alabama, the South, and the nation."

The Florida Power & Light Co. received the Reddy Kilowatt Annual Report Award, presented annually by Reddy Kilowatt, Inc. Ashton B. Collins, President of Reddy Kilowatt, Inc., presented the award to R. H. Fite, President of Florida Power & Light.

The Institute was host to the ladies at a luncheon on June 7 at the Claridge Hotel. The luncheon was followed by a program of special entertainment at the Roxy Theater, featuring a fashion show staged by Miss Dea Carroll, and a musical presentation, "An

Afternoon with Lerner and Loewe," spotlighting singers Jimmy Carroll, Jack Russell and Beverly Luria.

On the evening of June 8, Westinghouse Electric Corp. presented an outstanding program of musical entertainment at the Warren Theater, convention headquarters. Betty Furness, Westinghouse's well-known TV personality, was hostess of the program, which featured Philadelphia's Robin Hood Dell Orchestra, conducted by Alfredo Antonini. Guest soloist with the orchestra was Roberta Peters, Metropolitan Opera Co. soprano. Also appearing were film star Gordon MacRae and his wife, Sheila, in their supper club act.

Thanks Expressed

President King, in closing the convention, expressed his appreciation to all who helped make the 28th Annual Convention of the Institute a tremendous success.

He thanked the Convention Program Committee, which consisted of W. W. Lynch, President of Texas Power & Light Co., who was Chairman; and J. F. Davenport, Executive Vice President of Southern California Edison Co.; C. E. Eble, President of Consolidated Edison Co. of New York, Inc.; P. A. Fleger, Chairman and President of Duquesne Light Co., and newly elected Vice President of EEI; M. L. Kapp, President of Interstate Power Co.; and J. J. McDonough, President of Georgia Power Co.

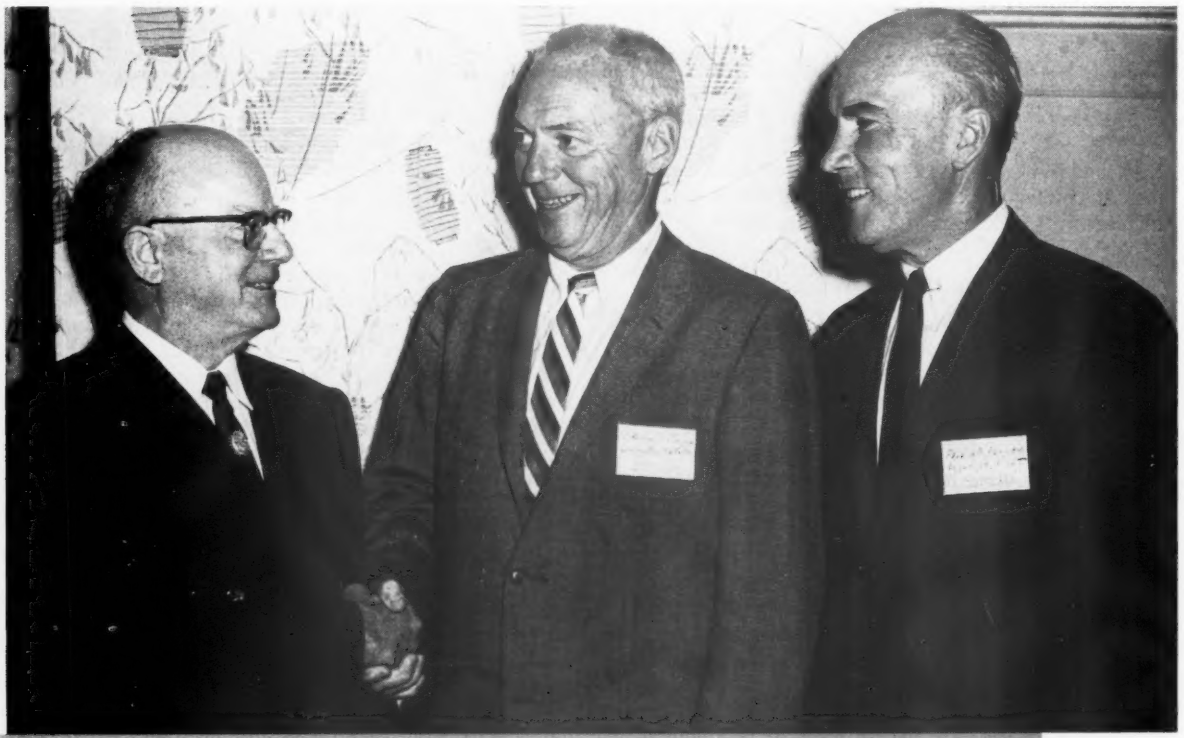
Gratitude to Speakers

Mr. King also expressed his gratitude to the speakers for the "stimulation, challenging ideas, and thoughtful evaluation" they brought to the convention in their presentations.

He paid tribute to the host company, Atlantic City Electric Co., and to Chairman B. L. England, and President C. M. Hagen, and their associates (who) "have been absolutely wonderful to us, as always."

He thanked Westinghouse Electric Corp. for its evening of entertainment and for "the superlative job Westinghouse people did in the presentation of the various visual treatments the speakers used."

He had high praise for the manufacturers, banks, contractors and others "who are working with us in advancing the industry's progress," and for *Electrical World* magazine for its daily coverage of the convention in the *Unconventional Daily*.



Sherman R. Knapp, center, newly elected EEI President and President of The Connecticut Light & Power Co., is congratulated by Allen S. King, President of Northern Power Co., the retiring EEI President. At right is Philip A. Fleger, Chairman of the Board and President of Duquesne Light Co., who was elected Vice President of the Institute at the 28th Annual Convention in Atlantic City, June 6-8.

Neighborhood Service: Foundation of World Leadership

By Allen S. King
President, Edison Electric Institute

THIS past year has been a most rewarding one for me. I am sincerely grateful to the Board of Directors of the Edison Electric Institute for extending to me the valuable opportunity of serving our great industry as President of the Institute. The activity of this position has at times been very taxing in terms of time and energy, but it has permitted me to become much better acquainted with the leaders of our industry in all parts of the country. This is more than adequate compensation for the time and energy expended.

Confidence for Future

I have always had a real love for the electric utility business, which has absorbed all of my working life. I have always had a great deal of confidence in this industry, and have continually viewed its potential with enthusiastic optimism. Now, after having spent a year traveling around the country and visiting with electric company people at meetings of various kinds, I have gained an even greater feeling of confidence for the future of our business than I had before.

The leaders of our various companies are men of ability, imagination and dedication to an amazing degree, and this would seem to assure our future. Our companies are good citizens in their operating areas and are continually promoting the areas in which they serve. This our communities recognize. The officers and employees of all of our companies are active in community life and are, in many instances, the leading citizens in their various cities and towns. In short, we are citizens wherever we serve, and have created good corporate images in our own operating areas.

These facts should give all of us real confidence in our industry's future, and in our ability to meet whatever challenges we may encounter.

A year ago at the New Orleans convention, I stated that it would be my purpose this year as I traveled around the country, to emphasize the need of the "Main Street" approach to our industry problems. Basically, the job of serving electricity to people is quite a personal and local activity. Even in our larger companies there is a neighborhood aspect to all of our business dealings. We are truly operating right down on "Main Street"—and it is only when we forget this point that we seem to get into serious difficulties.

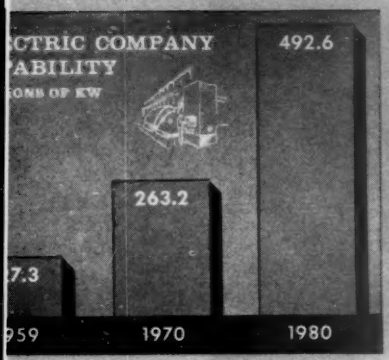
It is at the neighborhood level that our companies have their greatest challenges. A consolidation of this neighborhood approach by all of our companies would go a long way toward favorable solutions to certain of our national problems.

Our strength is in our great record of expanding service to the homes, farms, and industries of our country—the unprecedented job we have done in bringing electric service and its benefits to all Americans. We have achieved world leadership in power supply through the operation of our industry as part of our free enterprise system. By maintaining our industry as an active part of American free enterprise we will move forward to new records of achievement in the future.

Paradoxically, it can be said that some of our most aggravating challenges stem from the very excellent job we have done, and are doing, in expanding the use of electricity. Through our sales efforts and through a continual reduction in the cost of our product, we have developed the use of electricity in this country to the point where most people consider it a necessity of life. There is a tendency on the part of many people to take electricity for granted, and to consider it almost as much their right as the air which they breathe. This creates for us the very serious problem of maintaining the understanding and interest of our customers in the many and varied problems connected with maintaining reliable power supply.

In the process of increasing the use of electricity most of our companies have been growing bigger and it becomes increasingly difficult to impress upon our customers our identity as investor-owned companies which are actually an integral part of the American free enterprise system. This problem of maintaining the identity of our organizations as investor-owned

An address before the Twenty-Eighth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 6, 1960.



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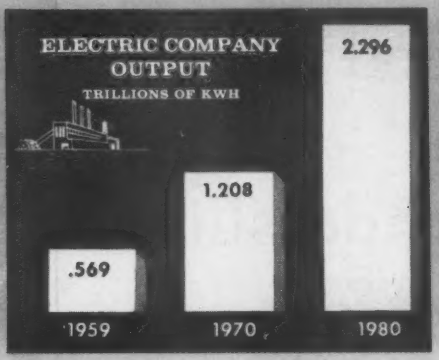

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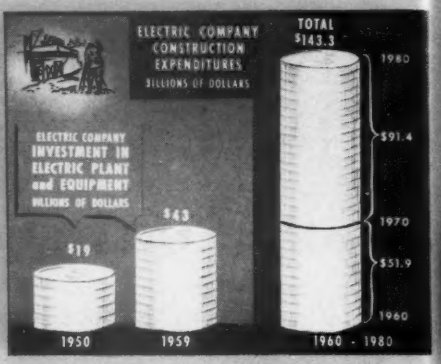

Figure 3

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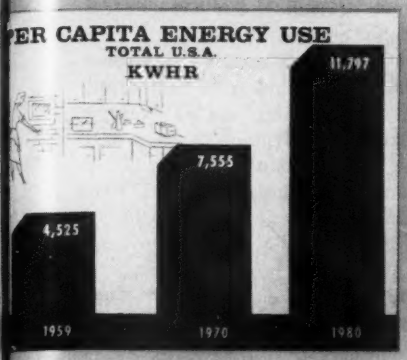

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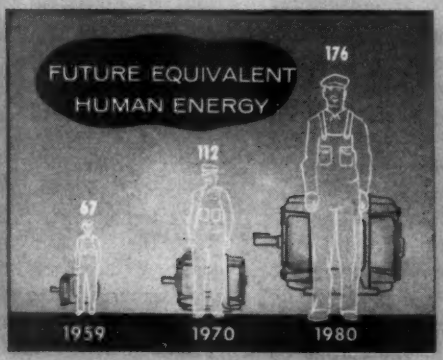

Figure 5

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Our electric companies had at the end of last year $43 billion invested in electric plant and equipment, which is more than double what it was 10 years ago. It is expected that new construction will require $51.9 billion to be spent by 1970, and an additional $91.4 billion by 1980 (Fig 3).

$143.3 Billion in Construction Expenditures

Altogether, from the beginning of 1960 through 1980, about $143.3 billion will be required to provide the additional plant and equipment that is predicted. In 1980 our new construction expenditures are expected to be at an annual rate of about $12 billion compared to about $3½ billion in 1960. Our country's gross national product, disposable personal incomes, and personal savings are expected to increase with the result that funds will be available for investment in the utility companies to meet these tremendous future demands for money.

These forecasts indicate the basic faith of the electric companies in the vigor and potential of the United States. Our companies believe, for example, that the over-all economy will continue to grow at least at the rate it has during the period since World War II. The population trend, the formation of new households, and the continual adoption of new electricity-using methods are all among the guideposts taken into account in making these forecasts.

The very magnitude of the numbers involved in our business—the billions of dollars, the millions of kilowatts, and soon the trillions of kilowatt-hours—are admittedly immensely difficult to comprehend. The growth we foresee may seem to some to be fantastic, yet we know that the dimensions of our industry today would have seemed equally breathtaking if they were forecast only 20 years ago, at which time our investment in electric plant was about $12 billion, less than one-third of today's total.

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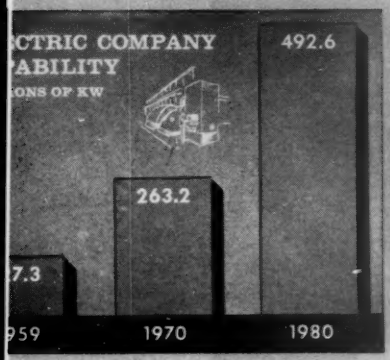
What do these figures mean in terms of human energy? Based on accepted energy equivalents, the electricity we use today is estimated to equal the energy of more than 67 men working for every single one of us—67 men working for each man, woman and child in the country, at home, on the job, and in the manufacture of the things we buy (Fig. 5). By 1970 each of us will have at his service the equivalent energy of more than 112 men, and 10 years later, 176 men.

The best way of all is for each of us to take stock of ourselves and to think of the various ways in which electricity serves us. Without a check list this



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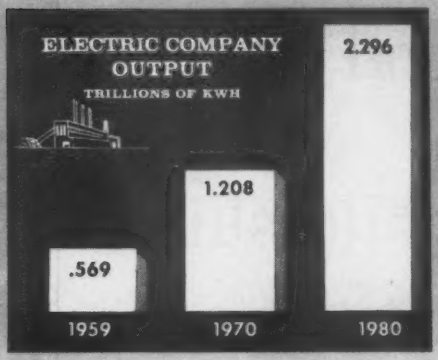

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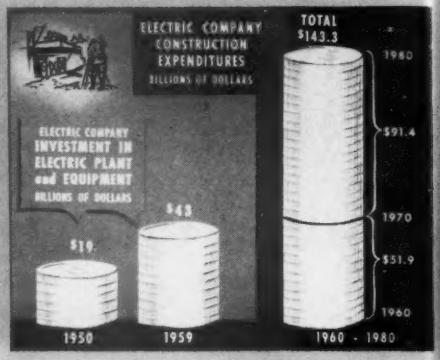

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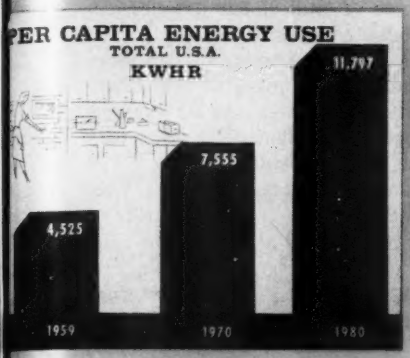

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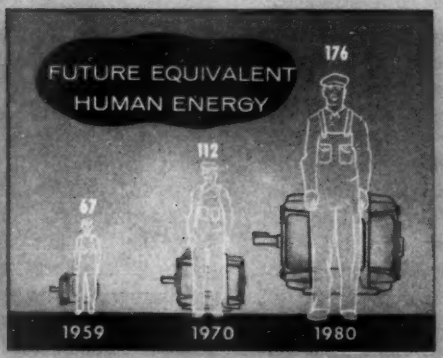

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becomes a difficult process as we have found in our own company's experience. If the average person is asked to guess how many appliances using electricity that he has in his home, his guess is usually about one-quarter of the actual number that is in use. We have developed quite an effective advertising stunt on this subject in our company. We provide our customers with check lists on which they first guess the total number of the appliances they have, and then turn over the page and check off from a full list of appliances the number that is in use. We find this game to be quite interesting to our people. For the future we expect there will be changes that are even more surprising than those that have occurred in the past.

Of all forms of communication, word-of-mouth is still the most effective. Even with all the claims on people's attention being made through TV, radio, newspapers and magazines, the most lasting impression results when someone you like and respect tells you something. Here is an opportunity for all of our employees, and certainly our wives, to enter into this "Main Street" job of telling our story to people.

The story of what the electric industry is doing, and is going to do, is a dramatic and exciting example of the effectiveness of a free economic system. As we tell this story we must make the fact very clear that the abundant supply of electricity available in America is a direct result of the free economic system in this country. Although there are areas in this country in which power is being distributed on some basis other than free enterprise, the history of our industry from its inception has been a history of men investing their funds and their talents in the growth of our electric supply.

From the time that Thomas Edison developed the incandescent lamp and set up the first central station system on Pearl Street in New York, numerous power supply systems based on Edison's work were established, all in the free enterprising tradition. A succession of imaginative men with great initiative has developed through the years in this country a growing system of generation and distribution that has built for America its outstanding industrial might. Today the United States produces more electricity than the next seven nations in the world combined.

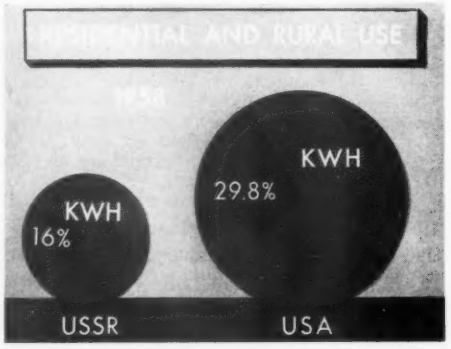
Russia, for Example

Russia presents a good example of what can be accomplished under a centrally controlled economy. In Russia under the czar, and later under the Communists, the government maintained strict control of the lives of the people and what they could use and do. America, under its free economic system, has made possible the growth of an electric industry that in 1959 produced more than three times as much electricity as the Soviet Union. On a per capita basis, the difference is even more striking. About four times as much electricity is available to each person in this country as there is to each person in Russia.

In some aspects, life in Russia seems to be changing. Russia, in a good many ways, is borrowing ideas and practices from our own free enterprise system. In certain government stores it is now possible to buy goods on credit. There is now a list of 21 kinds of goods that can be purchased on the installment plan, including two kinds of radios, fur articles, accordions, and even wooden canoes.

We read promises of future increases of consumer goods in Russia, but the actual changes in that direction seem to have been rather small. As an example of how the Russian society is oriented, in 1958 only about 16 percent of the power produced in the USSR went for residential and rural use, compared with 29.8 percent in our country (Fig. 6). As a matter of fact, the Russians are conducting a nationwide campaign to keep the use of electric power by people to a minimum. Letters and articles suggesting new ways to save electricity appear regularly in the Russian press. One of these articles in a recent issue of *Pravda* suggests that street lights be turned off late at night to save electricity.

This is quite contrary to the situation in this country. We do not ask people to save electricity; we try to multiply the variety of ways people benefit from electric service. We try to sell electricity in competition with other forms of energy. All of our companies have instituted aggressive sales programs. We have even united on a national scale in the Live Better Electrically program, to establish a core program of national advertising to increase the sale of electricity. We conduct broad research and development programs aimed at finding new uses for electricity, and also finding more economic methods of providing electric service.



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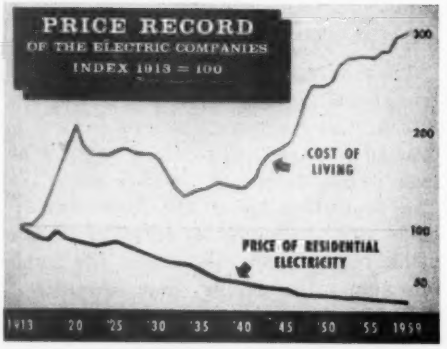


Figure 7

The free enterprise system of our country allows for flexibility of organization that produces the most economic results in electric power production. Our electric companies operate on a local basis, as they should, and yet they function in regional and national organizations at the same time. The companies administer those things locally which are best suited to local attention and decision. At the same time, they can join with other companies on regional and national levels to act in a number of ways—for example, in united research projects, for the interconnection of systems, for long-range developments and planning, for the exchange of information and experience, for advertising, and, in general, sales promotion programs, and in other ways.

Cost of Living Up; Electricity Down

The truth of the effectiveness of this system is shown clearly by the fact that over the years as the cost of living has been rising, the price of electricity has been going down. Although the cost of living has more than doubled in the past 25 years, the average price of residential electricity has decreased by more than half during the same time (Fig. 7).

If we are to insure the continuation of the free enterprise climate that has made possible the rapid growth of the American electric industry, electric companies throughout the country must re-double their efforts in this area of economic education. Freedom can be, and has been, lost through neglect. A free economic system can be replaced by a totalitarian system if the people do not want it and do not work to keep it.

People will not work to keep freedom if they do not understand it. Without a knowledge of economic facts people can be fooled into thinking that a totalitarian system might be better than our American free enterprise system. In a free country such as ours, the people control our destiny. Our people would not seek a change in our system to a totalitarian or socialistic system—but small change added to small change soon develops certain fundamental changes. It is most unfortunate that so many people, in calling upon our government for changes, base their requests upon an erroneous idea of what our present free enterprise system has done for them. It is up to us—each one of our companies—to have a part in presenting proper facts to the people.

America, with only 6 percent of the world's population, has through its economic system developed over the years so that it now produces more than half of the world's wealth. This small 6 percent of the world's population enjoys a standard of material living that has been the desire and dream of men throughout the ages. Along with this, an integral part of our American way of life has been the development of standards of freedom that have been the aspiration of men from the beginning of time. The electric industry has been an important factor in the development of our American productive system, and is a very important factor in the way every American lives. The growth and use of electric power has con-

Figure 8

tributed to and has been stimulated by the growth of the American economy. The future of the electric industry and of the nation as a whole depends on a continuation of the American free economic system, and in maintaining the electric utility business as an integral part of that free enterprise system.

There are some people who say that the job of supplying electricity to the country in the future is too big for industry so that the government must do it. I say to you that the job is so big that free enterprising industry must continue to do it, not government.

Where the scope of an activity is logically and properly in the public domain, the project is almost invariably in some sort of financial distress. For example, we find that there is continual financial stress in the areas of public roads, schools, water supply and sanitation, and people are attempting to find new sources of money for these purposes.

In areas of our country where so-called public power is dominant, we find that there is an urgency to borrow from our free enterprise method of financing to meet the needs of the people. TVA is now preparing to finance its growth through revenue bonds because it had difficulty in getting its money from the Congress. If TVA really wants to become a free enterprise electric system, it should finance its whole power business in the free market at the going rates for money, and it should pay taxes in the same way that the electric companies do.

We find the power system in Nebraska financed by revenue bonds, and in the Pacific Northwest the revenue bond technique has been used by the public power districts. The only difference in these cases from our free enterprise method is the lack of any equity capital, and the tax-free, or nearly tax-free, status of the operation.

Government power is expensive power when all factors of cost are taken into account. It is expensive. but it is priced cheaply, and the taxpayer makes up the difference.

The government might better use its taxing resources for those purposes which are undeniably in the public domain, and let free enterprise continue to develop the power generation and distribution systems of the country.

The future of the American electric industry and the future of all the "Main Streets" and rural routes of this country are inextricably united. Here again is a place where all electric companies should remember the "Main Street" aspect of our business. Our companies solve engineering and accounting and other problems on the local level, and as we attempt to meet our share of developing a program of economic education for the people, we should do so with a "Main Street" approach.

All of the facts about our economic system, the facts about our industry, and the facts about our companies must be told along "Main Street," and they must be told in "Main Street" terms. It is important that we identify ourselves as "companies," and it is important that we tell the story of the ownership of our utility companies. If we can bring people to understand that the real owners of our electric utility companies are thousands of small investors all across

(*Continued on page* 221)

The Rural Electrification Balance Sheet

By W. T. Lucking
President, Arizona Public Service Co.

ON the balance sheets of the business world we record our assets and liabilities, which reflect our successes, our failures, our wisdom, our daring, and our judgment. The balance sheet serves two purposes. It tells us what has happened in the past and provides a written record to guide us in the future.

By assessing the past, we can evaluate where we are in 1960 and better plan for the decades ahead.

An address before the Twenty-Eighth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 6, 1960.

So, first, what of the past? The history of rural electrification goes back 40 years—to 1920—when the investment of private funds in electric companies, coupled with technological advances, made it possible to begin major emphasis on rural electrification. Our industry recognized that rural electrification was an integral part of electric company development. During the 1920's we pioneered in finding better and more economical ways of using electricity on the farm. We joined forces with other interested groups in bringing

about a coordinated, systematic study of the problems of rural extensions and methods of promoting the use of electricity on the farm.

Optimism for the rapid electrification of farms ran high during the decade of the '20's. Real progress was being made. However, the great depression of 1929 changed this entire picture overnight. True, the need for rural electrification was greater than ever. But the sources of investment capital necessary to continue this and many other programs dried up. The few funds available for investment were attracted to better returns elsewhere, for the return on rural extensions was poor in a shattered economic situation. The farmer himself underwent serious economic reverses. He did not have the money available for appliances or electric equipment. Often, he did not even have the money to wire his home.

Serving the Rural Market

Despite the tight money conditions, the electric companies realized the importance of continuing attempts to serve the vast rural market. We knew that farmers were anxious to have the benefits of electricity. We knew, too, that electricity could serve as an important tool to help solve the extreme economic plight of the farmer. In many areas electric companies were able to continue to extend their lines into rural areas, despite the economic handicaps. But the odds against the industry as a whole were almost insurmountable.

And so, in one of its many ventures to provide new jobs and to prime the economic pump, the Federal government established the Rural Electrification Administration in 1935. An emergency loan fund of $100 million was created for farm electric development. Previous to, and at this time, the electric companies were cooperating to aid in any way possible the development of a feasible program. Then, in 1936, the Norris-Rayburn Bill was passed, establishing the Rural Electrification Administration as a permanent agency.

The Act stated, "The Administration is authorized and empowered to make loans in the several states and territories of the United States for rural electrification and the furnishing of electric energy to persons in rural areas who are not receiving central station service."

A clear preference was to be given non-profit organizations. Although investor-owned utilities could apply for loans, in actual practice few could avail themselves of the loan funds. It is important to note that the accepted intent of Congress at the time of passage of the Act was that REA funds were for the farmer only and that electric service should not be extended to people who could be served by an existing utility. Until the passage of this Act neither Federal nor state governments had played an important role in rural electrification.

As our country recovered from its economic ills in the late Thirties, capital once more became available, and the electric companies were able to revitalize their programs for rural electrification. Since that time, farming—so essential to our country's survival and growth—has made almost unbelievable progress. Today's farmer can feed nearly 25 people, whereas his father could produce only enough food to feed 10 people. Many modern farming techniques make this record possible. As an industry we are proud of the role played by the modern miracle of electricity.

Where is rural electrification today? Simply, the job is virtually complete. Today 97 percent of the nation's farms are electrified. Nearly half—43 percent—are customers of investor-owned utilities. Forty percent of the remaining farm customers are served by REA co-ops who purchase their entire power supply from private companies. This means that not only do investor-owned utilities serve directly nearly half of the nation's farms, but we have assumed the responsibility for supplying the total power needs for 66 percent of these rural consumers.

These facts testify to the willingness of investor-owned utilities to electrify the nation's farms through their own resources as well as to assist the REA co-ops in their approach to what has been a tremendous problem to solve.

When we look at the balance sheet for the 25 years of the REA's existence we realize that rural electric cooperatives have become a sizeable factor in our industry and the nation's economy.

There are about 1000 such electric systems operating in the country today. They serve nearly 5 million customers in 46 states, and have gross revenues of $618 million. Facilities installed to provide this electric service represent an investment of Federal loan money of nearly $4 billion.

These co-ops have grown rapidly and many of them have grown successfully. As of the end of 1958, 909 co-ops reported a combined net margin (this is their term for profit) of more than $74 million. In addition, "investments and special funds" totaled more than $237 million for a total figure of more than $300 million.

Things to Remember

So, as we look today at the "Rural Electrification Balance Sheet" I think it is appropriate for us to keep two things in mind. First, they are a big-business, profit-making operation; and second, they are in business legally. Whether we like it or not, we must face up to the fact that REA co-ops are here and are in business in practically every state in the Union. Federal laws provide the means whereby they obtain cheap 2 percent money for growth. Since they show a "net margin" rather than profit, they pay no income taxes. Various state laws provide additional encouragement for these individual electric systems to set up shop. As a result, most electric co-ops today are prosperous business operations. Many have departed from the original concept of farm electrification and seek industrial and commercial growth. However, some still operate on a marginal basis to provide only the electrical needs of the farmer.

So, between the electric companies and REA's the job of rural electrification is virtually complete. Where do we go from here, and what part is to be played by the electric companies and the REA's?

Rural America's economic development and growth are proceeding so rapidly that its electric power consumption has been doubling every four to five years, compared with seven to 10 years for the nation. An important factor in this growth pattern is the continuing movement of non-farm families, business and industry from urban centers to rural areas.

This is made strikingly clear by the fact that non-farm elements now use more REA-financed electricity than farmers. The REA's report for the fiscal year 1959 tells us that *non-farm* customers accounted for 54 percent of total power sales. Moreover, about 75 percent of their 131,500 connections were *non-farm* rural consumers, a ratio of three to one over the farmers. This proportion is bound to widen with the continuing growth of non-farm population and industry in rural and suburban areas.

REA estimates that this growth will require the investment by its electric co-op borrowers of an amount far in excess of loans made thus far in the program. In fact, future capital requirements of these systems have been estimated at $1 billion annually. This is in addition to the billions that our companies plan to invest for rural growth.

Continued use of electricity to further modernize the farms and to increase production is a vital necessity in a nation of rapidly expanding population. There is no question that today's farmer is a major market for all things electrical. Both the electric companies and the REA co-ops have a direct responsibility for meeting this challenge.

It is the goal of investor-owned utilities to bring the best possible electric service to *all* customers at a continually lower cost. We must operate as economically as possible in order to insure a fair return to the investors who put up the money that enables us to keep up with and stay ahead of the nation's dynamic growth. Our responsibility to customers, investors and employees has never been greater.

Should the goals of the REA co-ops be any different from ours? They, too, should seek better service at lower cost. They should strive for operating efficiencies and financial solvency. They should set aside reserves for emergencies and to take care of the continued growth facing them. They, too, ought to meet the responsibility for equitable wages and working conditions for their employees.

Disagreement on Methods and Means

Their goals should be much the same. Unfortunately, however, we cannot agree on the methods and means to achieve them. Yes, they have the legal right and responsibility *not* to make a profit if they choose the cooperative means. We have chosen the course that provides a profit and achieves our objectives at the same time.

Although in some areas we have been able to cooperate with the REA's in solving our mutual operating and technical problems, it is an unfortunate fact that general relations between the REA and private companies are not as good as we would like them to be. This unfriendliness is caused by many factors and varies from area to area. Some of it is operational while much represents ideological and political differences. In many cases the co-op leadership through the National Rural Electric Cooperative Association is quick to remind us that they would not be in existence today if we had done the job originally. We only have to look at the conditions of the economy during the time the REA's were formed to answer this particular statement. Some say that since they are in business and have been fairly successful we want to take them over. This is not our attitude. Rather, if they are successful we want them to join this great industry as a member of the free enterprise profit-making system.

A Basic Question

The basic question is whether or not the development of the electric business in this country will be under free enterprise or whether the government will have full control of this industry. The actions of many people in all phases of our life are making them more and more dependent upon their government, whether in the form of subsidy or outright gifts. As they grow less and less dependent upon themselves to activate and promote their individual success, the day of government ownership and control comes speedily upon us.

From statements made by some of the REA leadership it appears that this is the pattern which they wish to follow. These statements voice beliefs that imply the co-op farmers are socialistic in their make-up. I cannot believe that most individual co-op members consider themselves socialistic. In their own individual farm business operations they must deal with the profits and losses—and taxes—of our free enterprise system, just as you and I do. In many cases the individual member does not fully realize how he is receiving his power supply, nor is he in accord with the ideologies of the most vocal REA leaders. He undoubtedly pays his bill just as he would to one of our companies not fully understanding the public power goals of the NRECA.

Most co-ops consider themselves as locally owned, controlled and managed. They claim the right to operate on an equal basis with investor-owned companies in performing their service operations. Their only route to bring this about is for them to accept the full responsibility of business as well as enjoy the privileges of business. Surely, fair-minded members of co-ops would agree that they should pay their full share of community, state and Federal obligations, thus strengthening the necessary functions of government. Surely, fair-minded members of co-ops would agree that they should turn their backs on 2 percent Federal loans when the cost of money to the government is 4 percent and above.

In an economic system which has made this nation great no one group can prosper for long at the expense of all others. For this to continue and expand would mean the destruction of the nation as a whole.

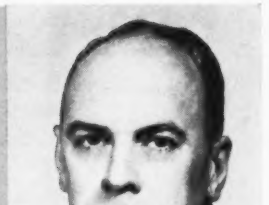
I might compare the Federal loan and tax subsidies of the REA's to the rearing of children by parents. None of us as parents would disagree with the time

(*Continued on page* 244)

Live Better Electrically—Key to the Electrifying 60's

By R. G. MacDonald

Vice President, Marketing, West Penn Power Co., and Chairman, Planning-Task Committee, LBE Program



A YEAR ago, at the EEI Convention, E. O. George, T. O. McQuiston and George Ousler outlined the industry's business problems and opportunities that made it imperative for the investor-owned utilities of America to undertake a national advertising, promotion and publicity program called Live Better Electrically. The business problem was summed up in the fact that over the last 10 years electricity's share of the appliance market has decreased in the face of aggressive, coordinated competition from the gas industry.

1 to 8 Ratio

Our opportunities were spelled out by Mr. McQuiston in the following sentence: "The all-gas house brings us a total of $52 a year, while the all-electric home offers us $425—a ratio of 1 to 8."

In addition, it was pointed out that the manufacturers of electric appliances were doing an excellent job of advertising—as they must—their own competitive brands and brand features, with only the most incidental reference to electricity or no such reference at all. Locally, manufacturers and appliance dealers were promoting appliances—individual appliances. And, again locally, utilities were spelling out the competitive advantages of electricity over other types of energy.

Two things were missing, however.

First, despite millions upon millions of advertising and sales dollars being invested against individual appliances, our industry was investing only pennies in presenting the concept of total electric living.

Second, leadership was needed at the national level to coordinate and tie together the efforts of all segments of the electrical industry; uniting them behind the total electric living concept; uniting them behind our slogan "Live Better Electrically"; uniting them behind some kind of battle cry that would show the American public that our entire industry is truly unified, no less than the gas industry is unified in the AGA promotional program.

My purpose is as follows:

- To report on the progress of the Live Better Electrically program and briefly review the advertising that has now been approved for the next 18 months.
- To ask every company in EEI and every manufacturer and every trade ally to take a direct and active part in this total electric living crusade.

Speaking for the Planning-Task Committee, I will touch upon the following points:

- The results of a mail questionnaire sent to utility executives asking their opinions of the LBE program.
- The results of a remarkable consumer study.
- A statement of policy developed by the LBE Policy Committee.
- A so-called copy platform—a set of guide lines used in developing our national advertising.
- The advertising itself.
- Four ideas for you as decision makers for the utility industry to consider as benefits for your indi-

MAIL SURVEY

162 UTILITY EXECUTIVES

(Participating in LBE)

Chief Executives	31
Sales V.P.	59
Resid. Sales Mg'rs	33
Ad. Mgrs	39
	162

Fig. 1

UTILITY EXECUTIVES' RATING OF NATIONAL ADVERTISING

	LBE	GAS
Strong	35%	71%*
Poor	7	2
Improving	86	42

*The higher the executive title, the "stronger" gas was considered

Fig. 2

An address before the Twenty-Eighth Annual Convention of the Edison Electric Institute, Atlantic City, N J., June 6, 1960.

NATIONAL ADVERTISING

	LBE	GAS
"Strong"	27%	51%*
"Weak"	10	7
"Improving"	49	64

*3 times as many dealers mentioned TV advertising for Gas as for LBE

Fig. 3

CONSUMER STUDY NO.1.

ELEVEN CITIES

Average monthly electric bill . . . $7.19
U.S. Average 7.18

Chicago	Los Angeles
Cleveland	Miami
Dallas	Minneapolis
Detroit	Omaha
Long Branch, N.J.	Springfield, Mass.
	Washington, D.C.

Fig. 4

ELECTRICITY IN THE HOME

INTENSITY OF INTEREST

CONSUMERS

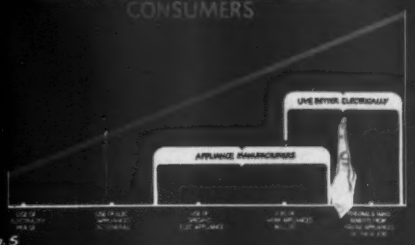


Fig. 5

Everybody wants to "Live Better,"

. . . . To enjoy

"MODERN LIVING"

Fig. 6

"MODERN LIVING" MEANS APPLIANCES TO MOST PEOPLE

What the terms "Modern" and "Modern Living" mean	% of Respondents
Modern Appliances	60
Modern House	9
New Car	9
Modern Transportation	6
Modern Furniture	4
Two-car Family	3
Wonder Drugs	3
Misc.	11

ALL ELECTRIC LIVING has clear meaning:

to Most consumers:

- Many electric appliances
- Highly desirable, pleasing idea
- Comfortable living, modern living

to Many consumers (1 out of 3):

- An expected high price tag

Fig. 8

"COST" IS A PRIME FACTOR ONLY WHEN MOTIVATION IS WEAK

The most powerful motives are the end-benefits of owning and using appliances

Fig. 9

RESISTANCES TO BUYING ANY APPLIANCES ARISE FROM THEIR GREATEST VALUES

- TIME & LABOR SAVING
- "BETTER LIVING" - "LUXURY"

Fig 10

TIME & LABOR SAVING

MIDDLE-MAJORITY WOMEN FEEL THAT:

- Working at "housekeeping" is necessary to gain and hold affection of husband and family
- They may not know how to use more leisure time productively
- Their husbands aren't sold on the "modern" emancipated woman

Fig. 11

APPLIANCE VALUES WANTED	CONFLICTS TO RESOLVE
Reduced work and time in "housekeeping" More status as "modern" woman	Reduced esteem of husband & family
Efficient, up-to-date homes More social status Pleasure in work "Better Living"	"Conscience" concerning indulging in "luxury"

vidual company and the industry of which you are a part.

Last winter, questionnaires were mailed to utility chief executives, sales vice presidents, residential sales managers and advertising managers (Fig. 1). The objective was to find out how they felt about the LBE program in its first years. It is interesting that the answers of all four groups were basically the same (Fig. 2). Only one out of three felt that the national electric program was strong, while 71 percent rated the AGA program favorably. Incidentally, AGA was widely praised by the electric utilities for its sponsorship of the nighttime television show, "Playhouse 90." Perhaps it's significant that 86 percent felt that the LBE program was *improving* while only half as many credited AGA with making comparable progress. I might add that AGA's national promotional budget is about 120 percent larger than ours.

A questionnaire was sent to appliance dealers in all parts of the country (Fig. 3). Seven hundred and thirty-six responded. Nearly twice as many rated AGA advertising ahead of the national electric program. About half felt that we were making progress. The most interesting fact, of course, is that AGA was given enormous credit for its sponsorship of "Playhouse 90." This, again, reflects AGA's far greater budget.

One unmistakable fact stands out from these surveys: the two segments of our industry which carry the ball at the local level—the utilities who sell the energy and the dealers who sell the appliances—both have the distinct impression that the gas industry is out-promoting us at the national level. If we are not doing a strong enough job to excite our *own* people, how can we hope to excite the public? Exactly what is going on in the public's mind? What is the public's attitude toward electricity? What does it expect of our industry? Indeed, is the public really receptive to our total electric living story? There is not a shred of doubt, not the slightest question that the public *wants* to Live Better Electrically, and *expects* to do so.

Public Is Ready

There is evidence that the public's mind is ready and eager to receive our Live Better Electrically story. Last winter, the LBE program invested $27,000 in a depth study to determine the state of mind of the American public as it examines the advertising of the electric and gas industries, and makes its choice (Fig. 4). Three hundred interviews with both wives and men, lasting as long as two hours each, were conducted among middle income families in 11 cities—Chicago, Cleveland, Dallas, Detroit, Long Branch, N. J., Los Angeles, Miami, Minneapolis, Omaha, Springfield, Mass., Washington, D. C.

The consumer *expects* the manufacturers and utilities to work together in presenting the story of Electricity in the Home (Fig. 5). The consumer has virtually no interest at all in the use of electricity *per se* —although this is the primary interest of the utilities which produce and sell it. The consumer's interest rises as we come to the area which is of primary interest to the manufacturers of appliances—"the use of specific appliances" and "the work these specific appliances will do." The consumer's interest reaches a peak when she thinks of the "personal and family benefits" that result from having appliances do these jobs. The key idea is that we must appeal to the consumer on the basis of the "family benefits" of total electric living.

Modern Appliances; Modern Living

Everybody wants to "live better" . . . to enjoy modern living (Fig. 6). When the interview started, interviewers asked the simple question, "What does modern living mean to you?" (Fig. 7). Incredible as it may seem, to 60 percent of the people modern living means modern appliances, either electric or gas. Tied for second place, way down at 9 percent, are modern house and new car. Such glamorous things as jet airplanes and wonder drugs are also-rans. Undoubtedly this survey reflects the fact that people are spending more and more time in their homes—and their minds are open to the concept of better living through electricity. All-electric living has a clear meaning (Fig. 8). To most consumers, it means many electric appliances. It is a highly desirable, pleasing idea. It means comfortable living, modern living. To one out of three consumers, however, it means an expected high price tag.

But—and here is the very essence of our research —*cost* is a prime factor only when *motivation* is weak (Fig. 9). The most powerful motives are the *end benefits* of owning and using appliances. Obviously, the challenge to those who make appliances, those who sell them, and those who produce the energy to run them is to create advertising that helps the consumer see how the *family benefits* of electric living outweigh the cost.

Resistances to buying any appliances arise from their greatest values—time and labor saving . . . better living and luxury. Here is the paradox of our business (Fig. 10).

Middle majority women (that is, 75 percent of all women, those in the middle income class) feel that working at housekeeping is necessary to gain and hold the affection of husband and family (Fig. 11). In addition, they are afraid that they may not know how to use more leisure time productively. And their husbands aren't sold on the modern, emancipated woman.

There are certain desires and conflicts that beset the woman, who initiates 90 percent of all appliance purchases (Fig. 12). Naturally, she wants reduced work and time in housekeeping, and more status as a modern woman. She is fully aware that appliances give her both. At the same time, she is afraid that work-saving appliances will reduce the esteem of her husband and family. Women want efficient, up-to-date homes—the same things men want in their business. Women want more social status, more pleasure in their work and "better living." But they have a twinge of conscience about indulging in the luxury of appliances.

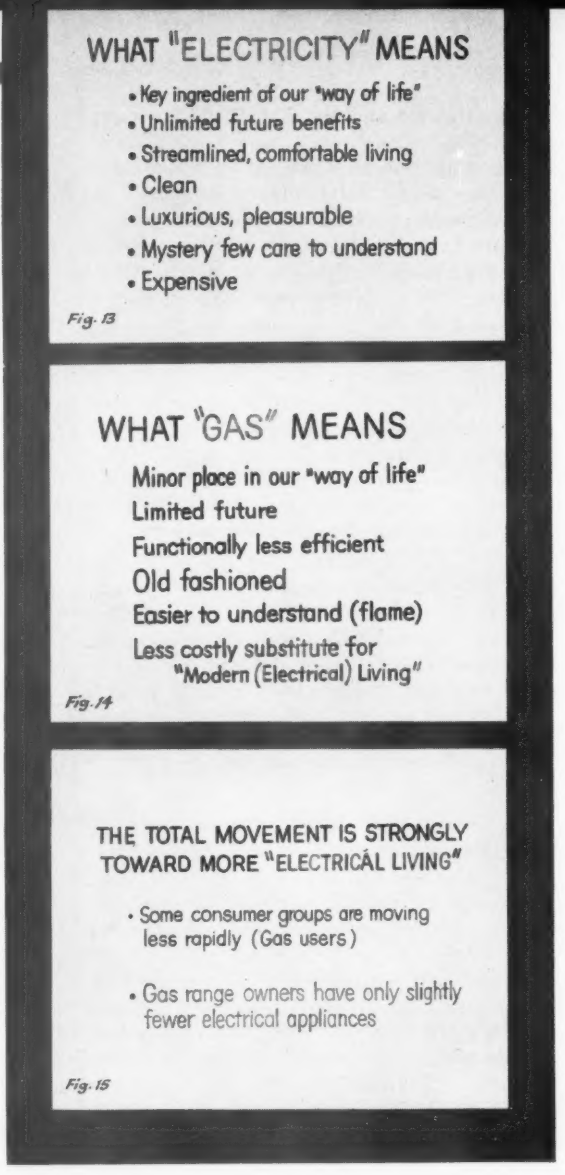
What our research tells us can be summarized in the following five points:

- The term "modern living" means modern appliances.
- While people talk about appliances being expensive, cost is not a major factor if the motivation to buy is strong enough.
- Women, who initiate most of the buying action, hold back because they fear losing the love of husband and family if appliances seem to make their lives too easy.
- Women want appliances, but they need our help in justifying them.
- The way to help them—to give them the strong unselfish motivation they seek—is to show how appliances benefit the whole family, instead of just making her life easy.

These five points form the basis for our entire advertising approach.

The next question is this: when she chooses an appliance, shall it be electric or gas? Generally speaking, electricity has an attractive personality (Fig. 13). Electricity is regarded as a key ingredient of our way of life. It offers unlimited future benefits. It means streamlined, comfortable living. It is clean, luxurious, pleasurable. Electricity *per se* is a mystery few care to understand. Many people have the notion it is expensive.

By contrast, people tell us that gas has a minor place in our way of living (Fig. 14). Its future is definitely limited, people expect very little in the way of new developments in gas appliances. It is functionally less efficient. Gas is old-fashioned—almost everybody admits this, but many gas range owners rather *like* the idea of being old-fashioned. The flame is easier to understand than the invisible mystery of electricity. And here we come to the overwhelming rationalization of people who favor gas: it is a less costly substitute for modern electric living.


WHAT "ELECTRICITY" MEANS
• Key ingredient of our "way of life"
• Unlimited future benefits
• Streamlined, comfortable living
• Clean
• Luxurious, pleasurable
• Mystery few care to understand
• Expensive
Fig. 13
WHAT "GAS" MEANS
Minor place in our "way of life"
Limited future
Functionally less efficient
Old fashioned
Easier to understand (flame)
Less costly substitute for "Modern (Electrical) Living"
Fig. 14
THE TOTAL MOVEMENT IS STRONGLY TOWARD MORE "ELECTRICAL LIVING"
• Some consumer groups are moving less rapidly (Gas users)
• Gas range owners have only slightly fewer electrical appliances
Fig. 15

Electrical Living Movement

The survey indicates that the total movement is strongly toward more electrical living (Fig. 15). Our research shows that the American public expects to live electrically in the future, but some consumer groups are moving less rapidly than others toward this desirable objective. These are the gas users, who are comfortably accustomed to using gas, who believe it has old-fashioned virtues, and who remind themselves that gas seems to be cheaper. An interesting fact supporting this inevitable move toward electric living is that gas range owners have only slightly fewer electrical appliances than those who cook electrically.

The obvious assignment of our industry—the utilities, the manufacturers and all our allies—is to hasten the movement of gas users toward the admitted goal of total electric living. This clearly suggests that our task is to describe our exclusive competitive advantages over gas so the consumer can weigh the facts and make a wise choice. In researching utility executives, we have found that they *want* a more competitive Live Better Electrically program. In researching appliance dealers, we have found that we *need* a more competitive Live Better Electrically program. In researching the consumer, we have found a strong desire for electric living and a desire for the competitive facts that will *justify the electric way of living in which they clearly believe.*

With such an unmistakable mandate, the Live Better Electrically Policy Committee drew up a statement of policy. This document reads as follows:

"The broad, strategic objective of the Live Better Electrically program is to sell more residential kilowatt-hours by featuring specific competitive equipment within the total electric living concept.

"This goal dictates these tactical objectives:

1. Create customer preference for electrical use that is directly competitive with other fuels. This means selling the benefits of electricity and, with honesty and good taste, calling attention to the advantages of electricity as compared with its competitors.

2. For maximum effect, concentrate this effort on *only* the most critically competitive subjects which now are: range, water heater, dryer, heating and cooling, Medallion Home.
3. Blend HOUSEPOWER and lighting into the advertising wherever possible.*
4. Provide for national coordination of the preference-building job with the local selling effort of member utilities.
5. Multiply the effect of the program at all levels by encouraging cooperative effort by other electrical industry members."

With this set of objectives committed to paper, the next step was to organize what is known in advertising as a copy platform. This consists of the basic selling themes that go into the ads themselves—words, phrases and ideas that must be present in all ads. I am not an advertising man myself, but I am told that there are three essential ingredients in all effective, result-producing ads. First, it is necessary to isolate an exclusive consumer benefit for your product—something that sets your product apart from all others. Second, there must be simplicity, an expression of this exclusive consumer benefit in simple, understandable, memorable words. Third, there must be a repetition of this exclusive consumer benefit in everything we do.

The gas industry, with a $6 million investment in its national program, has singled out its exclusive competitive advantage—the flame. Every AGA ad, in print or on television, hammers away relentlessly at the speed, modernity, quality and economy represented by the flame. Therefore, in an attempt to understand our competition, and find our own exclusive advantage, we went to the heart of the AGA program and discovered that our advantage was the exact opposite of theirs. Electricity is *flameless.*

*The 1960 program includes HOUSEPOWER and lighting ads.

Fig. 16

"What Comes to Mind?"

Researchers went into the field again. They asked consumers this simple question: "When you see this phrase, 'flameless electric cooking,' what comes to your mind?" Over and over and over again, the same answer was given: flameless electric cooking means safety, cleanliness and modernity. Without our saying safer, cleaner or more modern, the consumer automatically volunteered these comparatives. The word *flameless* brings to mind a wonderful picture of electric living—positive, truthful and strongly competitive. Therefore, the following copy platform was written and adopted:

1. Be sharply competitive with other fuels. Do this by exploiting the exclusive consumer benefits which stem from the fact that *electricity is flameless.*
2. Persuade the woman in our audience that she will increase her stature as a smart *home manager*—in the eyes of her husband—by using electric appliances.
3. Project a picture of *all* members of the family living better electrically. What we are selling is for the benefit of the entire family.
4. Give prominent and consistent display value to the theme line, YOU LIVE BETTER ELECTRICALLY.

Our research has told us that you and the appliance dealers want competitive advertising; that the consumer wants competitive facts upon which to base her choice between electricity and gas. It has given us the basis for our statement of policy, and it has dictated the copy platform. What about the ads—the product of all this spadework? Here is the basic advertising program for the rest of 1960 and all of 1961.

In a water heater ad, a family is shown enjoying the benefits of electric water heating—not a housewife taking it easy. The caption on the picture in the ad reads: "Flameless electric water heating is so safe." The copy does not say electric water heating is safer, for we know that without saying it the comparative comes automatically to the reader's mind. The headline asserts, in complete truth and honesty, "Only Electricity Provides Flameless Water Heating." The ad has a clean, uncluttered, simple personality—a forceful but tasteful communication from our industry to the American family.

In the new clothes dryer ad, there is the same strong use of the word "flameless." There is also the implication of benefit for the family instead of simply ease for the housewife—the rationalization she needs to initiate the buying process. There will be other ads

in the same format for the electric range. Extremely complete point-of-sale promotional packages have been prepared for the use of utilities and dealers in conjunction with these ads. The dryer, water heater and range ads will run in *Life, Saturday Evening Post* and *Better Homes & Gardens.*

When we turn to electric house heating, our ads take a sharply different direction (Fig. 16). Electric house heating is comparatively new. Perhaps we are now in the stage of development where the best thing we can do is tell the public that there *is* such a thing as electric house heating, describe the principal competitive advantages, and assure people that this new form of heating is practical. Ads of this kind will run in the same magazines as our appliance ads, plus the *Reader's Digest.*

Gold Medallion Home Format

Our new format for the total electric Gold Medallion Home ads features testimonials from families actually living in Medallion Homes, the people who have the experience to testify that total electric living is comparatively better. The centerpiece of one advertisement is electric house heating, since heating is the heart of total electric living. And the headline testifies to a specific benefit: "To us the most wonderful thing about flameless electric house heating is that it is so clean." Finally, in the individual pictures, the ad talks about the competitive appliances, HOUSEPOWER and Light for Living. Spreads like this will run in *Life, Saturday Evening Post* and *Better Homes & Gardens.*

In 1961, we will run 15 ads in *Life* magazine, making LBE the 17th largest advertiser in that magazine among 1350 advertisers. There will be 15 ads in the *Post,* ranking LBE 17th. There will be an ad in every issue of *Better Homes & Gardens,* and LBE will be the second largest advertiser in the magazine. Five single page ads will run in *Reader's Digest,* all on the subject of house heating.

Four Ideas

I have four ideas which I would like to address specifically to the presidents and other officers of the electric companies.

- It is evident from all of our research that our advertising must be competitive. There is no point to our investment if our advertising is not competitive enough to win business from other types of fuel. We must state the case for electricity as a service to the public so the public can make a wise choice. We will not realize the industry's magnificent opportunities by accident, or inertia, or by letting things take "their natural course." We will succeed, as any other American business does, only by having the courage and imagination to compete.
- We hope that you will ask your people to tie in your local promotions with the national program—using the word, "flameless," and the slogan, "You Live Better Electrically," and portraying the family benefits of electric living. This national program will not do your local job. All sales are made locally. But keep in mind that by repeating locally the seling messages that are used nationally, your local investment will be substantially more effective. Our leadership program needs your direct and active leadership in your own companies.
- Perhaps you agree that each company should help finance the Live Better Electrically Program from a separate budget, rather than borrow funds from our local promotional budgets and thus reduce our ability

(*Continued on page* 234)

Power: Its Contribution to Our Future

By Frank Pace, Jr.
Chairman of the Board, General Dynamics Corp.

I DO not believe these are days for speeches. Today, when a speaker on television can reach more people in one minute than could Abraham Lincoln in an entire lifetime, it becomes almost impossible to say anything new.

An extemporaneous address before the Twenty-Eighth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 7, 1960.

It is only a short time since the Summit Conference collapsed. Since then, millions of words have been written and spoken in hundreds of languages. The world's situation has been analyzed to the point where novelty of approach is no longer possible.

But even so, the world's situation affects your industry, as your industry affects the world. As I

said, I do not believe these are days for speeches; I do believe these are days for thinking together. I think it is a time to take our own experience and our own problems and put them into the perspective of what all of us, as individuals and as an industry, face in the remainder of this century.

The past history of the United States' utility industry is impressive enough. One must recognize that, to provide a nation comprising 6 percent of the world's population with 35 percent of its electric power, a tremendous job must already have been done. That has meant not merely meeting the requirements of the nation as they arose, but in many instances leading the nation into paths that it might have overlooked. In terms of performance, the statistical figures of the past speak for themselves.

When you turn to the future, the figures are even more impressive in terms of requirements and plans to meet them. You are obviously quite aware of the explosive increase in the world's population. Frankly, I had not realized until recently that over the remainder of this century this country's rate of population growth is expected to exceed the world's average and that by 1975 we should reach 240 million Americans, and 300 million by the year 2000.

Impressive Projections

I have been even more impressed by projections on the almost incredible power requirements existing internally in this country, and by the fact that the electric industry plans to double, at least, the present electric power capacity by 1975, and double it again by the end of the century.

To me, the most impressive thing of all is that nowhere do I see any doubt of the industry's capacity to meet these requirements. Of all things, that is the highest testimonial to the quality of your planning and managerial competence. As you look at the other great fields of civilization's advance—education, communications, transportation — questions arise in the mind as to our current ability to do the jobs we must. But for the great utility industry, the capacity to meet the challenge seems to be taken for granted.

Yet the time has come to ask yourselves, as I must ask myself since I have become intimately associated with this industry: Is this enough for the world in which we live? I have to answer that question by saying, "No, it is not."

To explain that, I would like first to go back a bit into the history of this country. In the early days of this nation, men and women crossed oceans in tiny, inadequate sailing vessels to a strange wilderness, fought beasts, weather, famine, poverty and danger because, to them, freedom was paramount. Having found relative sanctuary in, say, a small New England town, they might have rested, might have said, "This is enough." Yet, instinctively, they realized mere sanctuary was not enough. When freedom was threatened from abroad, men grabbed their rifles and rallied. Not all of them, I know; some were opposed to the Revolutionary War, some profited by it. But, by and large, the American spirit held that nothing was too much to preserve freedom.

Even then, that was not enough. They moved out, to the South, the Midwest, across the prairies and the mountains, dying like flies on the way to the West. For well over a century, there was an urgency to grow, to create a great nation, to assure the preservation of this nation and its inherent freedom.

With the end of the Civil War that sense of urgency was transferred in another direction. Two oceans protected us from without, and the world's affairs were not ours. But we found ourselves with a great system of government, born out of the minds and hearts of the great men among the 3 million people who were originally this nation. We found ourselves with a land of great natural resources. Again, instinctively, we turned to utilization of these resources to build a better way of life for our people, and in doing it, to set a standard for the world towards which all men could strive.

Our method was a free enterprise system. The competitive instinct of man has been the greatest driving force in producing these results. We did it sometimes unwisely, sometimes ruthlessly—but we did it. To our eternal credit, we created a better way of life not for the few, but for all. We created an American dream of opportunity for all. We have maintained and realized this dream through wars and great depressions. Today we stand on the threshold of providing an even better way of life for our people.

But it is still not enough. Yesterday's world is not today's. Today's will not be tomorrow's. One generation ago the world was headed by friendly allies. Britannia ruled the waves, and the world was in relative order. Those allies are no longer dominant in the world. Today the dominant powers are ourselves on the one side and, on the other, Soviet Russia and Communist China—Godless societies, dedicated to the destruction of our way of life, ruthlessly centralized and with a clear driving purpose.

Russia has set as its goal to equal and surpass us militarily by the mid-Sixties, economically by the mid-Seventies. China, with a probable population of a billion by the end of the century will be trying the same thing. The Chinese are by nature competitive entrepreneurs. They are intelligent people from an old civilization. Picture for yourselves the effect of a billion persons with the same competitive drives that we prize in ourselves as Americans, but without our moral restraints.

I read recently that an official organ of Red China carried a policy statement that nuclear war was not necessarily mutually destructive. In fact, it went further. It declared that out of the ashes of a nuclear war would arise a socialist state that would put to shame any former capitalistic society.

So we have in the world a ruthless, combative opponent. The oceans that were our protection are now an illusion. For an ICBM it is only 30 minutes from a launching pad in Russia to this country. The thermonuclear warhead has created a measure

of destruction never before known. Right here and now we are as firmly and as clearly on the military front line as was ever any nation in history. We are far from the protected isolation that existed before World War II.

We face, at the same time, a world-wide explosion of population; a whole new group of nations violently striving for independent recognition; a world-wide intensity of desire for a higher standard of living unlike anything that has ever existed before. It is for the minds and hearts of these new peoples and nations that the great powers of the West and the great power of Communism are contending—and more, for the economical, political and military support of these peoples.

And so, a world has changed overnight. "Better living" as a goal in itself is no longer adequate. The urgent problem for America, for its individual citizens and for its industries, is an old one that is again new: how to preserve the way of life that was formulated for us in those early days of great courage.

Cycle of History

As you look at history, you cannot help sense that it has gone through a whole cycle. In the early days, great performance was not enough. More had to be done. In the century in between, some of that feeling disappeared. Now we are back at the point where extraordinary efforts must be made, beyond any "normal" requirements, and by everybody, if this democracy is to achieve its heritage.

As Toynbee has said, there is a pattern of rise and decline to civilizations. But that cycle is not inevitable. It can be changed by the drive and energy and enthusiasms of peoples. This is the time when America must renew and rekindle its spirit of greatness, of "something more." I think we must get a sense of hot war urgency into cold war requirements. I think the lethargy that sometimes becomes associated with a democracy must disappear. I think we must recognize that slow strangulation is as sure a death as a quick bullet. I think there is again a challenge to greatness that this nation must meet.

This industry and its people are uniquely qualified to help meet that challenge. I feel that way because the very essence of the industry is long-range planning, to think not one, two, three years ahead, but 10, 20 or even 40 years ahead. That is now second nature to the industry. It is this kind of planning, as opposed to living year-to-year, that is essential to this nation.

You are qualified because it has been the nature of the industry to face big problems and recognize their implications. It is no small thing to provide this great, growing nation with one of the essential ingredients of civilization's growth. It is no simple thing to double capacity in a limited span of years, or to plan effectively for two full generations ahead. Not only are these your characteristics, but they are the things the American people expect of you. Big challenges are in no sense new to you, nor beyond you.

Finally, by one of the coincidences of mankind, there has been placed in your hands one of the vehicles which lends itself to the preservation of our way of life—nuclear energy. I have watched this development since the days when I was Director of the Budget. I watched it through the period when we made the decision in the Pentagon to go ahead with thermonuclear bombs. I saw the transfer to industry, and through my company's General Atomic Division, I have participated in it.

Frankly, I have been proud of the statesman-like way in which the industry has tackled the problem. It might have been more simple—some thought it wiser—to ignore this new challenge. Instead, you have tested it courageously and aggressively, and established a basis for a program of peaceful atomic development around the world.

We in business know that great ideas are not unique. But more than one great idea has disappeared because of lack of great execution. It is not until ideas are put to the hard test of economic requirements and managerial competence that they become realities, that they provide the advance in individual life, in industry, or in civilizations.

In the commercial applications of nuclear energy, we have a great idea, and I hope, great execution. Its development holds for us not only great internal self-interest, but an avenue of hope for a better way of life for all peoples. Breakthroughs in the art are occurring more rapidly, to the point of jumping a whole millenium in the progress of power. We need, perhaps, still to develop managerial competence and knowledge for those who will one day receive these new techniques, so that they will have the ability to use them effectively. I know your industry has been studying this problem. The simple, personal, human relations involved become the essence of sound international policy and a major requirement of our own survival. This is an area you may want to consider at greater length as you look at the future and the contribution you can make to it.

My mind runs again to that remarkable historian Toynbee when he says that a historian, looking at this century of ours, might come to the conclusion that the things for which this era will be remembered will be not two bloody world wars; not the almost unbelievable metamorphosis in speed and efficiency of transport or communications; not even the tremendous impact on the world with the splitting of the atom, nor the advance in medical science. He thought instead that this century might be remembered as the first century in which man dared hope that the benefits of civilization might be transmitted to all mankind.

And, because of the nature of your industry, because of the challenge and responsibility that is yours, there may be among you a man or men who will play some part in the realization of Toynbee's prediction, and thereby help to bring to this nation the full realization of its heritage.

Electric Heat: the Big Market of the Sixties

By T. G. Ayers
Vice President, Commonwealth Edison Co.

TO many students of marketing, electric heat is one of the greatest opportunities ever to confront our industry. Even so, I do not believe that we utilities fully appreciate the potential this market offers. Neither do the manufacturers.

My objective in this discussion is to intensify your awareness of this opportunity and to stimulate your response to it. I will project some ideas and raise some questions regarding electric heat. You can evaluate the ideas in terms of your service area or your company better than I can. Then, too, I am sure the answers to the questions will vary widely among individuals. Finally, I would like to suggest some avenues of programming and action.

Let us start by looking briefly at the whole indoor climate conditioning market, of which heating and cooling are twin components. There are 50 million residential electric customers in the country (Fig. 1). Six and a half million now have room air conditioners. Another 900,000 have central cooling, or, in total, 14 percent have air conditioning. Nearly all of this growth has taken place in the last decade. Last year the residential cooling equipment market grossed about $800 million, up 17 percent over the previous year.

The marketing success of residential air conditioning has been a major factor in bringing about a summer peak condition to many northern utilities (Fig. 2). The consumer has literally taken air conditioning away from the seller. Little education was needed—no existing device was being outmoded, and there was really no competition. So we see that the cooling part of electric indoor climate conditioning, which is more or less separable from total electric living, is off to a fast start.

On the other hand, electric heat customers, while doubling in the past three years, still number only 600,000 (Fig. 3). Ten-year projections vary from 3½ to 4½ million, or 6 to 7 percent of the expected 60 million customers. As contrasted with air conditioning, electric heat must compete with firmly entrenched heating devices. So the heating portion of the climate conditioning market, which is virtually inseparable from total electric living, has just left the starting post.

An address before the Twenty-Eighth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 7, 1960. 7, 1960.

Figure 1

Figure 2

An all-electric home offers the manufacturer the potential of some $1,500 more in equipment sales—wire, cable, switches, appliances, etc. An all-electric customer will use at least 20,000 kilowatt-hours a year or six times the present national average (Fig. 4). The projected 4 million electrically heated homes could use 80 billion kilowatt-hours, or nearly half the electricity all residential customers used last year.

Such estimates are only averages of the trend-line variety. As Shirley Gracy of Florida Power says, "An average is the best of the lousiest and the lousiest of the best." As exciting as these figures are to contemplate, they don't begin to measure where we could go if both manufacturers and utilities really decided to sell.

Taking someone else apart is always easier than self-analysis. Let's start with manufacturers. The vista of the electric heating market is 50 million present dwellings and upwards of 1¼ million more each year. Electric heating equipment manufacturers grossed only about $100 million last year, but in less than a decade it is envisioned as a billion-dollar-a-year industry.

Now, what has been the manufacturers' response to this opportunity? The number of respondents has been great. I only hope they prove substantial and reliable in like measure. Their products have developed and improved, but not, I believe, with the imagination and boldness that fit this market.

Look, for instance, at baseboards. Most are copies of conventional heating units, and equally aesthetic. A unique feature of electric resistance heating is that the units can be shaped, positioned, and adorned in countless ways. Why not let the modern be modern in design?

Are today's bathroom blower units in keeping with the palaces of glass and enamel where the homeowner washes his hands? Or do they recall the glinting sunbowl with its protective cage of wire? What about ceiling cable? Is this marvel of radiant heat, unseen and infinitely flexible, being neglected because its profit margin isn't great enough? Or what about prefabricated ceiling panels? Is the progress of this innovation dawdling because installation techniques are slower and more painstaking?

Above all, are manufacturers really alert to the versatility of electric heat? In one form or another, it is adaptable to any condition, any situation, any preference. Would they be wiser to broaden their line rather than to insist on baseboards where ceiling cable would be better, or resistance units where the heat pump belongs? Sometimes the best application within a given house calls for more than one type of electric heating equipment. In the long run, the consumer is king, or, in this case, the housewife is queen. Do we have to insist on short draperies when the ladies want longer ones? Why not give the lady what she wants?

If high-wattage units cause wall streaking, why not concentrate on lower wattages, or spread the air flow? Do heat pumps have to be sold with little or no attention to servicing? And must their critical testing be left to the unsuspecting customer?

Only one of the heat pump types marketed in my own service area in 1959 proved out to specification under test. Among the product difficulties uncovered was a case where the heat pump performance coincided with a company's internal engineering data, but differed radically from their published sales performance charts. Manufacturers were glad to get our test results and to respond with changes and modifications. If the manufacturer had to suffer in solitude, I wouldn't feel so badly. But we have to suffer with him. One dissatisfied customer can set you back further than several satisfied ones can help you.

Moving from production of heating equipment to its distribution, electric heat poses several new challenges. Realignments in the traditional distributor-dealer-contractor-builder relationships are inescapable. While I would like to be constructive, there is

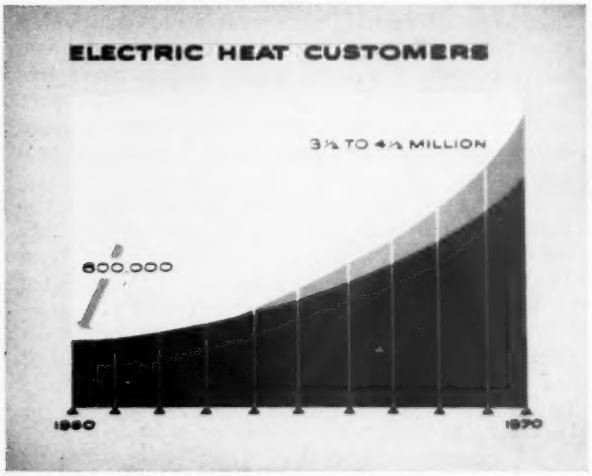


Figure 3

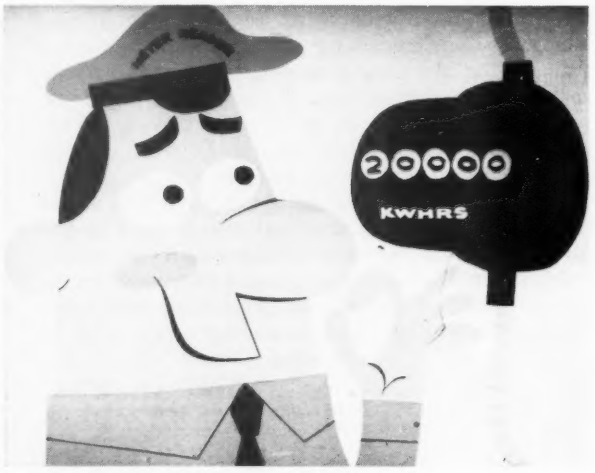


Figure 4

no crystal ball to reveal the format. However, I do know that today Americans bake packaged cakes, buy weddings in ensemble, vacation on packaged tours, and are socially secured from cradle to grave by a single tax deduction (Fig. 5). The buyer likes to buy complete; under a home mortgage he can, and will, buy more. Some manufacturers recognize this problem and are trying to solve it. How the manufacturer ties together the heating contractor, the electrician, the supplier of insulation, storm windows, appliance distributor, etc., is difficult to foresee. It means disturbing time-honored prerogatives and habits. It will require a high degree of local variation to solve the problems that arise.

A new product in today's consumer market needs the full treatment of modern promotion: market research and pinpointing, volume advertising, sales cooperation, and all the other techniques. Manufacturers have made a good start, but only a start.

A large part of today's advertising is directed to the trade. While you don't get any back talk when you talk to yourself, I suggest that a stronger appeal to the buyer would be more productive. When people pick their grocery for the color of its trading stamps and their service station for the pattern of its goblets, a good part of the promotional dollar should be directed to the consumer.

Some otherwise effective advertising on electric heat is now diluted by its inclusion in ads on appliances, lighting, and so on. Electric heat is important enough to spread on its own full page. It has a marvelous story to tell. But it must be told specifically, forcefully, and repeatedly. This cannot be accomplished with tag-on references at the bottom of ads featuring "Live Better Electrically" or "Total Electric Living."

Finally, I would be bold enough to suggest that those selling electric heating equipment be able to make some concessions at the point of sale, especially during the pioneering period. The local representative who can wheel and deal on an important subdivision, high-rise building, restaurant, or school, will have a head start on the market. These suggestions carry all the wisdom of Monday morning quarterbacking, all the sagacity of second guessing. They are, however, intended to be constructive.

I cannot close my remarks on manufacturers without paying them tribute. This spring in Chicago, NEMA held its First National Electric House Heating Symposium and Exposition. Attendance of five or six hundred was expected. Nearly three thousand came. The interest and the quality of the program demonstrate that manufacturers *are* becoming alert to their opportunity. I have full confidence that the manufacturing genius which made possible the today's electric era will rise to the needs of tomorrow.

Do the utilities fully appreciate the opportunity of electric heat? I can't, for the life of me, understand why we are not more excited about it. The *Electrical World* Heating Survey estimates annual revenues from houses now heated electrically at $225 million (Fig. 6). The volume is expected to increase six to seven times in 10 years.

How are we meeting this opportunity? Perhaps self-analysis will prove more difficult than sizing up the other fellow. To begin with, have our engineers and rate people evaluated the heating kilowatt-hours and the corresponding cash that will flow into our tills? Or do they tense up over the load it imposes on our generators, transmission lines, sub-stations, and distribution networks? If we are honest, we must admit that they have been traditionally conservative, and sometimes short-sighted. I am reminded of the professor at one of our great schools of technology who wrote in 1897: "After a thorough investigation, I find the electric light a failure." As one of my colleagues says, the electric light and power industry has been "failing" its way to success ever since.

People tell me that the flat iron posed a real stickler to our distribution engineers—500 watts in a single

(*Continued on page* 238)

Figure 5

Figure 6

Commonwealth Edison Wins Edison Award

COMMONWEALTH EDISON CO. of Chicago received the electric industry's highest honor, the Edison Award for "enlightened, significant contribution toward the development of economic nuclear power" in the completion and operation of the Dresden Nuclear Power Station, the nation's first large, privately financed power plant.

The Award also was given in recognition of the company's "outstanding efforts in the promotion of low-cost residential electric space heating." It was presented to Willis Gale, Chairman of Commonwealth Edison, by Allen S. King, retiring President of EEI, at the close of the Institute's 28th Annual Convention.

Commonwealth Edison was cited by the judges for an "enlightened, significant contribution toward the development of economic nuclear power, culminating in the achievement in 1959 of critical operation of the Dresden Nuclear Power Station, the country's first large reactor generating plant paid for by private enterprise—so soundly financed as to burden neither the customers nor the stockholders of the company, and for accomplishing the objective within the time and cost estimates—all exemplifying cooperative effort among electric utilities in the best tradition of the industry; for pioneering procedure in securing an operating license and for contributing importantly in the obtaining of substantial Federal third party indemnification; and also for outstanding efforts in the promotion of low-cost residential electric space heating."

Largest in Nation

The 180,000-kilowatt plant's nuclear power reactor is larger than any now in operation or under construction in the United States. Construction of Dresden was started in the spring of 1957 and completed last fall. On Oct. 15, 1959, Dresden went into critical operation with the achievement of its first chain reaction. The first electricity was generated in the spring of this year, and full operation is scheduled for this summer.

Sharing the research and development costs of the Dresden project were members of the Nuclear Power Group which, with Commonwealth Edison, included American Electric Power Co., Bechtel Corp., Central Illinois Light Co., Illinois Power Co., Kansas City Power & Light Co., Pacific Gas and Electric Co., and Union Electric Co.

In building Dresden, a contract price of $45 million was established with the General Electric Co. Of this amount, Commonwealth is paying $30 million and the balance is being paid by the members of the Nuclear Power Group, including Commonwealth, as a research and development expense. Additional site and overhead costs of about $6 million will be paid by Commonwealth.

Commonwealth was selected for the Edison Award through a sequence of nominations by a panel representing every section of the nation, analysis of accomplishments of the nominated companies by a review committee, and a decision by a committee of judges. Judges were Dr. J. D. Ryder, Dean of Engineering, Michigan State University; C. W. Kellogg, Past President of the Edison Electric Institute; and Mr. King.

The Edison Award is given annually to an electric company "for distinguished contribution to the development of the electric light and power industry for the convenience of the public and the benefit of all."

Consisting of a gold medal for the winning com-

pany, and $1,000 for the company's employees' benefit fund, the Award has acquired national prominence in the public mind as well as in the electric industry for its significance in recognizing conscientious service and progressive development.

The presentation to Commonwealth Edison represents the second time the Edison Award has been given. It was presented for the first time last year, taking the place of the Charles A. Coffin Award, which was given annually from 1922 through 1957 in recognition of outstanding achievement in the industry.

Mr. Gale, upon accepting the Edison Award, made this statement:

". . . It is with pleasure and gratification that I accept this award on behalf of Commonwealth Edison Co.

"While Commonwealth Edison owns and will operate Dresden just as it would any of its other power plants, Dresden was financed, in part, by contributions from other members of Nuclear Power Group.

"These are: American Electric Power, Bechtel Corp., Central Illinois Light, Illinois Power, Kansas City Power & Light, Pacific Gas and Electric, and Union Electric.

"These companies by the end of 1960 will have paid more than $12 million toward the $51 million cost of the project.

"Of great importance, too, has been their cooperation.

"It has been a most rewarding experience to have been associated with them.

"General Electric, as you know, built the plant under a fixed price contract which, I gather, meant a financial contribution. But far more important was the tremendous competence GE brought to the project. It is entitled to a full share of whatever glory comes from Dresden.

"I must give a plug also to Bechtel Corp. which, as engineer-constructor for GE, has done a superb job.

"I am pleased to note that your citation also mentions our efforts toward the promotion of electric space heating.

". . . It is my sincere hope that our industry will go all out to promote every phase of electric living. . . .

"Thank you very much for this honor."

Willis Gale, right, Chairman of the Board of Commonwealth Edison Co., accepts the Edison Award, highest honor of the electric industry, from EEI President Allen S. King at the 28th Annual EEI Convention in Atlantic City, June 8. Commonwealth Edison received the award for "enlightened, significant contribution toward the development of economic nuclear power" in the completion and operation of Dresden Nuclear Power Station, the nation's first large, privately financed power plant.

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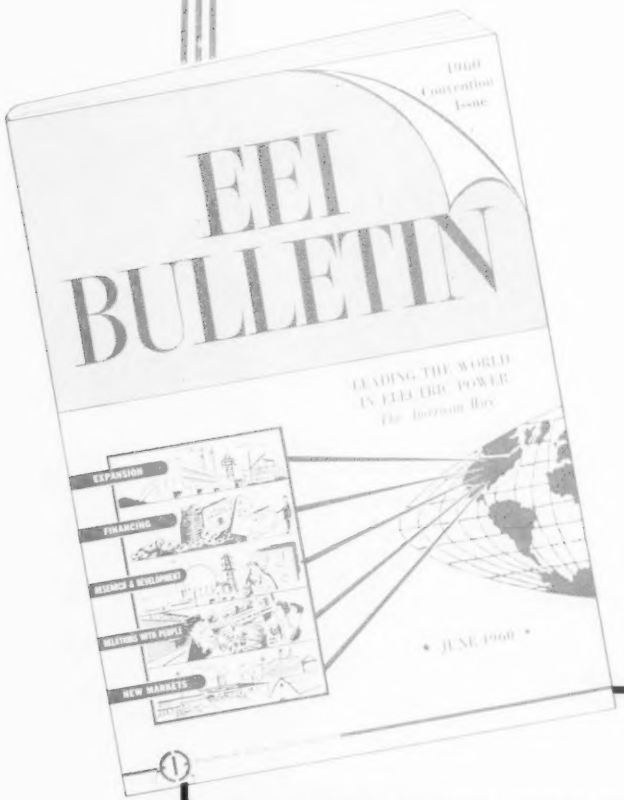

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Private Enterprise and Public Service in a Free Society

By Dr. F. J. L. Blasingame

Executive Vice President, American Medical Association

YOU have been compelled again and again to fight against Federal encroachment.

So have we.

You are still being compelled to wage this fight.

So are we.

And let us not deceive ourselves: we must be prepared in the future to fight even harder than before—to redouble our efforts, to make our voices heard so clearly that no one can fail to understand.

This is not merely a matter of survival; it is a matter of keeping faith with the future. I want to make this fact plain: I want to preserve, to protect and to promote the private, non-governmental practice of medicine in the United States. Anything that helps the attainment of this objective, I am for. Anything that hinders or undermines the attainment of this objective, I am against.

The medical profession is dedicated to the easing of pain, the healing of the sick, the prolonging of human life. But it cannot function effectively at these tasks unless the physician is allowed to practice medicine in the climate of freedom.

Physicians Recognize Stake

Physicians, therefore, recognize their stake in preserving our competitive society, with its accent on the ability and responsibility of the individual. And they stand beside any other groups which share these beliefs, recognizing a close community of interest.

It is not enough to affirm—however eloquently—the principles upon which this nation was built. The medical profession recognizes, as you do, that deeds always are more important than declarations.

We recognize that we must sell principles as well as products, and ideals as well as services, for only in this way can we survive as a free people.

It is not enough today to be merely a good doctor, if you want to remain a free doctor. Nor is it enough today to sell a better product at a better price, if you want to preserve free enterprise. For there are those in influential positions in this country who are determined to undermine public confidence in American medicine, business and industry—all part of a calculated attempt to push this country into a controlled economy, with politicians at the controls.

As many of you know, American medicine was involved in a fight for its very life only 10 years ago. The Wagner-Murray-Dingell bills, supported by the Truman administration, constituted a massive and outright effort to socialize medicine in this country. We took our fight to the people and we won.

A New Crisis

Today American medicine is face to face with a new crisis. I refer to the bills introduced in Congress designed—in one way or another—to make compulsory national health insurance the law of the land. But this campaign is even more insidious, more dangerous, than the campaign waged by the enemies of private medicine 10 years ago. Under the guise of trying—purportedly—to help the aged, these enemies of private medicine are now maneuvering to socialize medicine in the United States step by step over a period of years. They are afraid to proclaim publicly that they want to gobble up medicine overnight; instead, they plan to do it a bite at a time.

Many of the bills introduced in Congress to substitute political medicine for private medicine would permit the Federal government to buy, with an unpredictably huge quantity of the public's tax dollars, a limited amount of hospital, surgical and nursing home treatment for 16 million persons eligible for social security retirement and survivorship payments—mostly those citizens who are over 65. This applies to millions of older people who neither want nor need the dubious benefits of such legislation, but who would be forced to accept it, like it or not.

Political Medicine

What would such legislation mean, if enacted? It would mean medicine controlled and administered by the Federal government. It would mean red tape, bureaucratic control, high costs and inferior medical care. Moreover, it would establish a system of socialized medicine for a large segment of our population.

Americans rejected political medicine overwhelmingly in 1950. But here it is again—this time under different labels.

Who are these people trying to socialize medicine?

An address before the Twenty-Eighth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 7, 1960.

They include labor bosses, notably Walter Reuther, who want to get their retired union members off their backs, regardless of how much it costs the public. They include political figures more interested in furnishing a handout than a helping hand. They include background manipulators, in politics and out, willing to play callously on the fears of the aged as a calculated part of their strategy to socialize private enterprise, whenever they can, wherever they can.

False "Crisis"

They have not hesitated to attempt to smear the medical profession, just as they have attempted to smear your industry. Make no mistake about it, some of them have distorted the truth, perverted the truth, and deliberately misinformed the American people. They have attempted to create a false atmosphere of "crisis," and they have attempted to stampede Congress into hasty and reckless action opposed to the best interests of all our citizens, regardless of age.

Where they have falsified, we have set the record straight. You can be sure that we will continue to do so.

Now, all of the legislative cure-alls proposed thus far are based upon these three false premises:

- The aged are too poor to pay for their own medical care, although their medical needs are greater than those in other age groups.
- The aged cannot get private health insurance—or if they can, this insurance is inadequate.
- We know enough about this complex problem at the present time to solve it with legislative means and without further study.

These are indeed false premises.

We have an arbitrary definition of old age, which probably is due to considerable outmoded thinking, and to the Social Security Act itself, which bases old age on birthdays. A man is old, according to the Act, at age 65; a woman at 62.

By this standard, there are now some 15.5 million Americans over 65 who can be called aged. Each year their ranks will increase, until by 1970 we can expect to have 20 million people over 65.

To a great extent, we are wasting their potential by retiring them from useful work through inflexible personnel policies; through unthinking segregation within our communities; through our national attitude of putting the accent on youth.

When these people are forced into retirement—and many of them are ready, willing, able and anxious to continue on at their jobs—their cash income usually drops. At the same time, their need for health care services increases until it is about twice that of the younger adult.

It is this combination of lower income and greater need for health services that has led to the mistaken assumption that medical expense is the most critical problem b setting our aged population.

Against this background, let us examine the premises on which the proponents of Federal action are basing their arguments.

First, are the aged too poor to pay for their own medical care?

The answer is that some are, but the overwhelming majority is not.

Income drops after retirement, yes. But no age group is likely to have as favorable a liquid asset position as the aged, 74 percent of whom now own liquid assets in one form or another.

Furthermore, the needs of the aged person are usually modest. The heavy expenses of raising a family are behind. For the most part, homes are already paid for. In fact, according to the Federal government, almost three in every four couples on OASI own their own homes, most of them mortgage-free.

A survey in 1957 by the National Opinion Research Center learned that only 9.6 percent of those aged interviewed would be unable to pay a medical bill of $500.

And so, when we consider the financial resources of the aged, we can make sense only if we know how many have income from employment, social security, pensions, annuities, savings, investments, insurance, or other assets.

We can only measure their financial resources intelligently if we examine them in terms of family incomes and assets—not individual income and assets.

The economic problems of older people are not only complex but diverse. Yet a serious effort is being made to pressure the nation into some form of irreversible, hasty, and costly legislation.

Of the more than 15 million persons in the nation over 65 years of age, only 15 percent are on old age assistance. An undetermined number—although able to finance other costs—finds it difficult to withstand the additional burden of the cost of serious illness.

But it is for these people that something should be done.

Neither of the most prominently mentioned legislative proposals now before Congress is tailored to meet their specific problems.

But if the financial problems of the aged have been considerably exaggerated, so have their health problems.

Most older people are in good health. There are no such things as diseases of the aged. There are simply diseases among the aged, just as there are diseases to be found in any age group.

But these diseases are not necessarily disabling or incapacitating.

Chronic Illness Misunderstood

We hear a good deal about the prevalence of so-called "chronic illness" among old people. And so there is. But the term is generally misunderstood. The term "chronic" refers to a recurrent condition, or one that persists over a period of time.

A man with impaired hearing, who needs a hearing aid, can be considered chronically ill. So can a diabetic, although with the help of insulin he can lead a perfectly normal life.

When reference is made to the relatively high incidence of chronic illness among the aged, it is therefore important to remember that this is not the same

thing as a high incidence of debilitation, disability, or incapacitating sickness.

Dr. Ethel Shanas of the University of Chicago recently surveyed a representative group of older people with enlightening results. She found that 20 percent or fewer of those over 65 were sick to the degree that illness limited their normal activity.

The consensus of those she interviewed seemed to be: "the way things are now, most people can expect to feel pretty good when they are 70."

There is the further fact that the health care needs of older people cannot conveniently be separated from their other needs. Some of our aged have many needs—in housing, in recreation, in preparation for retirement, in finding acceptance and understanding within the community, in developing new interests, in using their talents and capabilities.

In meeting those problems, the nation's doctors cannot work alone with any hope of success, even though they have repeatedly stated that no person, regardless of age, needs to forego a physician's services because of inability to pay for them. The problems of the aged will be solved only through the cooperative attack of nurses, doctors, hospitals, social workers, insurance companies, community leaders, corporate executives, and others.

Insofar as health is concerned, the problem primarily involves acute illness and the so-called degenerative diseases. In a very large percentage of cases, the main need is not for an expensive hospital stay or a surgical operation, but for medical care at home or in the doctor's office. In other cases, the important requirement is nursing care in the patient's home, or in the home of relatives. And in still others, custodial care in a nursing home or public facility may be the only answer.

The point is that the medical needs of the aged are subject to countless variations, and can be met only with the flexible techniques available under our present free system of medical practice.

Now let us examine the second premise on which the proponents of massive Federal action base their thinking.

They say that the aged cannot get private health insurance, or that if they can, their insurance is inadequate.

Majority Has Health Insurance

The record disproves this completely. Private voluntary health insurance is growing at an almost miraculous pace. A survey completed in late May, 1960, discloses that some 127 million persons, or 72 percent of the country's civilian population, now have some form of private health insurance.

This survey, announced by the American Enterprise Association, shows that the number of persons covered by private health insurance has almost doubled in the last 10 years, and has more than quadrupled in the last 15 years.

It is significant that the amount of health insurance owned by aged people is growing at a faster rate than that of the population as a whole.

There are now 37 Blue Shield plans in 34 states which offer coverage for the over-65 age group. In all but three instances, there is a companion Blue Cross plan as well. An additional 16 Blue Shield Plans, in 11 other states, have over-65 programs in various stages of development.

And more than 125 private health insurance firms —some of which are licensed to do business in all states—offer coverage to the aged.

Health insurance benefits for the aged are provided under a number of different mechanisms. Older active workers are, without exception, continued in group insurance plans. Most new group plans provide for continuation of benefits to retiring workers. Other group plans allow the retiring worker to convert his protection to an individual policy. Several insurers are now issuing group plans to such associations of older people as Golden Age clubs.

Most Contracts Continued

Most insurers continue into the later years individual contracts issued at younger ages. And contracts especially designed for older people do not require evidence of good health as a condition of eligibility. In fact, after a short probationary period, benefits are paid for loss due to pre-existing conditions.

Finally, there are some insurers who offer health insurance contracts that become paid up at age 65.

This wide diversity of plans reflects free competition among many insurance companies which vie with one another in the effort to provide ever more adequate benefits through more efficient methods.

As for the benefits available to the aged under private health insurance, they are not significantly different from those offered to younger people.

In 1952, only 26 percent of the older age group had some form of health insurance coverage. Today, more than 49 percent—more than six million persons—are protected against the cost of health care, with the number of insured rising more rapidly than for any other age group.

This increase can be expected to continue. Those who have had protection during their working years value it, and can be expected to continue it after retirement.

This was not the case, however, with most of the present aged who did not have this kind of protection during their working years.

The Health Insurance Association of America estimates that 65 percent of the aged needing and wanting protection will be insured by the end of this year; and this percentage will increase to 80 percent by the end of 1965; and 90 percent by 1970.

Finally, there is the premise that we know enough about the complex problems of the aged to act now, without further study, in terms of legislation. We simply do not. And clearly, any legislation adopted in haste, during the inevitable tensions of an election year, is likely to harm the very people it is intended to help.

Some proponents of compulsory national health insurance have sought to create an atmosphere of panic, in which this far-reaching legislation could be rushed

into law without adequate consideration of the best interest of our aged citizens.

This would be a tragic mistake for our nation, for it would involve a vast program, costing billions of dollars and exploring a new and uncharted field without offering all interested and responsible parties an opportunity to present their viewpoints.

If we act in haste, we shall certainly repent at leisure.

AMA's Eight-Point Program

The American Medical Association has offered an eight-point program for meeting the problem. It is as follows:

- The needy aged, who now receive health care through old age assistance programs, can be assisted through better organized medical care programs, including preventive medical care.
- The near needy, a group of indeterminate size able to meet ordinary costs of living, but not the costs of a serious illness, should be helped under some state-administered program of Federal grants-in-aid to the states. This should be done by liberalizing old age assistance programs so that the near-needy would be given health care without having to meet the present rigid requirements for indigency. A liberalized definition, as determined locally, would permit an expanded program and encompass the near-needy group.
- Better nursing home facilities are needed for the long-term care of the aged person, especially those over the age of 75. This is the most urgent health care need before the nation today. The average age of nursing home patients is 80, and their average duration of stay is two years. It is here that major improvement can be brought about. The AMA supports Federal programs for new nursing homes.
- Health insurance and prepayment policies tailored to meet the needs of the aged for long-term nursing home care must be developed as rapidly as possible. Health insurers, and the Blue Cross and Blue Shield plans across the nation are already experimenting in this new area of coverage.
- Home nursing care is needed. The care of the aged patient at home is psychologically, medically, and financially desirable. Many programs to promote home nursing care are being developed. Homemaker's services also provide opportunities for children caring for aged mothers and fathers to continue gainful occupation. These services need to be expanded.
- A basic change in attitude toward the aged person must be brought about. The person who reaches 65 has not suddenly become non-productive, and senescent. On the contrary, most persons over 65 are reasonably well and able to work. Increased productivity by eliminating compulsory retirement and permitting voluntary change of work is an essential part of the answer to the present problem.
- Many older persons are unaware of the need for continuing healthful nutrition and other practices that contribute to good health. They must be educated in the preservation of health during the later years. Preventive medical measures instituted long before the age of 65 can also contribute materially to the promotion of good health after age 65.
- One of the principal economic problems of the aged person in the last 20 years has been the constant and continuing erosion of the purchasing power of his pension benefits. Any government program to help the aged must be anti-inflationary and maintain the purchasing power of fixed pension and annuity benefits.

To sum up the AMA's position, sensible, economical health care programs for the aged, that preserve freedom at the same time that they promote security, must necessarily be limited to support for the needy aged and leave to voluntary, competitive, private enterprise, those activities needed to improve the health care of the rest.

As for the ways in which Congress may need to supplement the present efforts being made by the health professions and private citizens, we believe that this cannot be determined without further study.

It is imperative, in the opinion of the American Medical Association, that the facts essential to effective planning be obtained in the months remaining before the White House Conference on Aging in January, 1961.

Knowledge of Facts Essential

As leaders of a vital industry, I think you will agree with us that a knowledge of the facts is essential to the solving of any problem—particularly one of such complexity and importance as this one.

At the moment, legislation is now before Congress. The proponents of national compulsory health insurance are using every pound of pressure they can muster to influence legislators facing election campaigns. Both political parties are acutely aware of the upcoming conventions, the resulting party platforms, and the race for the Presidency.

In this atmosphere, the counsels of prudence and patience are easily drowned out—unless they are amplified by as many strong voices as possible.

We urge you to add your own. Get in contact with your Congressmen and Senators, and ask them to postpone action on *all* proposed Federal health plans for the aged, pending further detailed study in the months ahead.

Point out to them, if you will, that action by the Federal government at this time borders on the foolhardy, for the many reasons I have mentioned.

A Rash, Dangerous Course

To tamper with a system of private medicine that has made this the healthiest nation in history is a rash and dangerous course. To tamper with that system now, without the facts, would be rasher still.

I am reminded of a quotation from the writings of Abraham Lincoln: "In all that the people can individually do as well for themselves, government ought not to interfere."

The nation's doctors believe this, as you do, and accept it as the basis for all intelligent action, or restraint from action, by government.

I urge you, as men well acquainted with govern-

ment's efforts to interfere with the free enterprise system, to take what action you can as quickly as possible.

Congress and the Senate are considering this legislation right now.

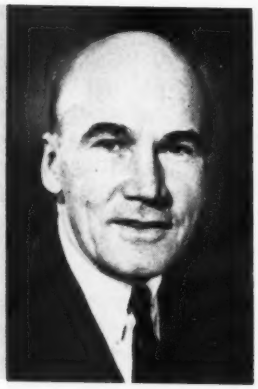
What they decide to do will affect every citizen of this country, for at stake are the health and well-being of 15½ million older Americans; a system of medical practice that has helped make this the healthiest nation in the world's history; and the very strength of the free enterprise system itself.

Speaking for 178,000 of the nation's physicians, I hope that you will stand beside us, and fight beside us, in our effort to resist this latest incursion by government into a field in which it does not belong.

The Role of Research in the Electric Industry

By P. A. Fleger

Chairman of the Board and President, Duquesne Light Co.



RESEARCH takes many forms. It can be glamorous and exciting. It can also be dull and plodding.

Researchers must be constantly ready to explore the alleys and by-paths, the dark and winding lanes that often lead nowhere, but that may, suddenly, turn a corner into a bright new world. It is along these little-travelled paths that the occasional revolutionary discovery may be found.

But most of today's research is of an evolutionary nature. It is carried out along the main avenues, the broad highways that past research has opened for travel. Research teams move forward along these roads. The discoveries they make often do not seem startling in themselves, but taken together, they form the bulk of progress.

Birth of an Industry

Matthew Josephson, in his recent prize-winning biography of Thomas A. Edison, calls Edison's Menlo Park laboratory "the world's first industrial research laboratory." It was there that the incandescent lamp was developed and the electric industry was born.

Edison specifically set out to develop an electric system that could compete with the gas industry. Before he opened his first central station, in 1882, he sent men from door to door asking potential customers whether they would change from gas to electric lighting if the cost were the same. He found they would and that he could compete with gas lighting by selling electricity at about 25 cents a kilowatt-hour. This was the price he set.

Today, the average revenue per kilowatt-hour from residential electricity is just about 1/10th the price Edison charged. This fact should serve in itself as the chief illustration of the dramatic progress the electric industry has made during the past 80 years. And research has made it possible.

Distinctive Character of Electric Utility Research

Research in the electric utility industry differs from that in most other industries. Because there is basically no direct competition between our companies, the results of both our evolutionary and revolutionary research can be disseminated quickly throughout our industry. The electric utility companies learned early in their history that the public interest and their interests were best served when the companies exchanged information freely. Today, through the committees of the Edison Electric Institute, as well as through other trade organizations, our companies are able to learn what each other is doing and can thus build on each other's experience.

Team Work in Research

Through the whole fabric of electric industry research the key pattern is "team work." There not only is team work among the men and women in the laboratories, there is team work among our companies. There is also team work among our companies and our many allies: the electrical manufacturers, the independent research groups, and the universities.

Take, for example, the development of higher and higher temperatures and pressures in thermal electric plants. What has taken place is this: the manufac-

An address before the Twenty-Eighth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 7, 1960.

turers have provided laboratory facilities for research in this area. The electric utilities, in turn, have provided facilities for field testing, made suggestions for modifications of equipment in order to meet actual operating conditions, and contributed new ideas for meeting the changing requirements caused by constant growth in the use of electricity. In some phases of the work, university research organizations have been called on for assistance. The result of this cooperative effort has been the development of increasingly efficient steam plants.

Another example of team work can be found in the field of nuclear power. Since the passage of the Atomic Energy Act of 1954, 132 electric utility companies have joined with the Atomic Energy Commission, various service organizations, and manufacturers to take part in 26 projects aimed at developing nuclear power that will be competitive with power produced from conventional fuels. The majority of these projects consists of the construction and operation of actual nuclear power plants. Nine of them, however, are in the area of research, development, and study.

Still another sort of team work can be seen in a research project carried on at Johns Hopkins University under a grant from EEI. This effort resulted in the successful development of an electrical device for use in treating interruptions of normal heart rhythm during surgical operations. The device has been christened the "closed-chest defibrillator." It seems to me that a little research might be done on finding a somewhat less frightening name.

Of course, much of the research being carried on by the electric companies is conducted solely by the companies themselves. In fact, a recent survey by the Edison Electric Institute disclosed that 968 projects were either in progress or had just been completed by EEI and its member companies. I am sure that many of these projects would seem of little interest to the general public. "Infrared pyrometer studies of overhead line splices," for instance, are not likely to become headline news anywhere. Still, projects like this make up the bulk of electric industry research and provide the basis for continuing evolutionary progress in the industry.

Electric Industry Research Expenditures

One measure of the scope and magnitude of the electric industry's research effort is in terms of the dollars being spent. Of course, it is difficult to calculate the cost of research accurately on an industry-wide basis, for companies often allocate their expenditures in different ways. However, a recent EEI survey of 120 electric utility companies does give an indication of the amount of money our industry devotes to this activity. According to the survey, these companies spent more than $6½ million on research in 1959. This year, 1960, they estimate they will be spending in excess of $8 million.

These totals include both engineering and non-engineering research, but they do not include research in nuclear power. For several years our industry has concentrated a vast amount of effort in this promising area. Last year electric utility companies spent more than $100 million on various phases of nuclear power research, including the construction of nuclear power plants. In 1960 they will be spending another $132 million.

It is clear from these figures that the electric utility companies of this country are devoting a substantial amount of money to continued progress in the production and delivery of electricity. To these direct expenditures, however, we must add the amount electrical manufacturers spend on research for the electric utility companies. The cost of this research, naturally, is included in the price of the equipment we buy from the manufacturers. It has been estimated at between $100 million and $125 million annually.

In other words, total electric industry research expenditures, including expenditures in the nuclear power field, are currently running in the neighborhood of one-quarter of a billion dollars annually.

True Dimensions of Electric Industry Research

But the true dimensions of our industry's research cannot be fully reflected in dollars and cents. What will grow out of the research being done today is difficult to predict accurately. The broad outlines may be in sight, but not the details. And certainly not the price tags.

Our efforts to generate electricity from the atom are well known. Not so well known is the fact that we are exploring fusion—the principle of the hydrogen bomb—as a means of generating electricity.

Much attention is being devoted by the electric industry to the area of direct energy conversion. Ahead, there is a vision of raw energy, including nuclear energy, transmuted directly into electricity. Our most modern power plants are able to transform about 40 percent of the energy locked in a lump of coal into electricity. This represents tremendous progress since Edison's day when only 2½ percent of the energy in coal was being used. But through direct conversion, the percentage may be greatly increased. At the same time, it may be possible to do away with most of the bulky and expensive turbine-generator equipment we use today. Many paths are being explored in the attempt to reach this goal, including magnetohydrodynamics, thermoelectric, thermionic, and fuel cell. Any one of them could result in dramatic developments in the electric power business.

Another important area under study is that of heat storage. Here is a subject of great significance for both the generation and utilization of electricity. For instance, it would be a great advantage in electric house heating if we could supply energy for heating to our customers at times when the demand for electricity for other uses is relatively low. This can be done if some way is developed to store the heat over a period of time. Considerable research has been done toward reaching this goal.

Today, electric companies are experimenting with the use of radar to warn of approaching ice- and thunder-storms. They are studying the effectiveness of "cloud seeding" as a means of increasing the water available in the area of hydroelectric stations. They

are studying the behavior of lightning. They are learning how to slow down the growth of trees, without impairing their health or appearance, in order to lessen the cost of the pruning needed to keep trees from growing into power lines. They are even studying the habits of woodpeckers, in order to control the damage these birds do to wood poles.

Equally exciting developments are being explored in the way we will be utilizing electric power. People sometimes say we are living in the "push-button" era. Before too long the push button may be a thing of the past, as outmoded as the crank on a Model T. In many cases, the electric appliances we use will seem to be thinking for themselves.

A Look into the Future

What will electric living in the future be like?

If it is raining, or if the housewife is busy, she will call the shopping center over a two-way TV-telephone. Merchandise will appear on the screen, in color, of course.

In the kitchen, food will be prepared, cooked, and served at the direction of an electronic computer programmed days ahead of time. There will be an appliance that takes the food from the freezer to the range; then cooks it and serves it. The refrigerator will be electronic, with no moving parts. The dishwasher will only be used on special occasions, when the best china is brought out. For everyday use, a small electric machine will manufacture disposable dishes.

The light bulb will be a thing of the past. Instead, people will be using area sources of light. Whole walls will glow with electroluminescence. And you won't even need to flip a switch to turn them on. All you'll need to do will be to say the word "on." But you'll have to be careful about mumbling.

When dirt collects on a carpet, a closet will open and a vacuum cleaner will emerge. Automatically, it will clean wherever necessary and then, silently, put itself away and close the closet door.

One wall will probably be made up of a giant TV screen. On it you will be able to receive programs, "live," from Europe, Australia or anywhere else in the world. The signals will be bounced to your living room off satellites circling the earth.

The air in the house will be comfortable all year round. You will simply set a control at a desired temperature and humidity, and they will be kept at the selected levels, automatically.

The driveways and paths around the house will be heated, too. Snow shovels will be oddities. Interior decorators may even begin using them as ornaments.

The garage doors will open automatically and electric automobiles will glide out onto electronically controlled highways that will make steering unnecessary. The driver will be able to read, or sleep, watch television, or just listen to the record player in the back seat.

I know it sounds fantastic. Yet, what will be the most amazing developments in electric living probably are not among the things I have mentioned. They will be the things we cannot even imagine today, things which only tomorrow's researchers will be able to dream of, develop, and eventually bring into reality.

How soon these developments will be brought into reality is largely dependent on the nature of the electric industry's research program. So the question arises: is our research program adequate?

There is no denying that our research activities are exceedingly broad in scope. On the other hand, there are a number of problems that probably warrant more attention than we are giving them.

The vast potentiality of direct energy conversion probably justifies some intensification of our efforts in this field. Other methods of generation, such as wind power, sunlight conversion, and radiation conversion should not be overlooked. Further studies have also been suggested on the economical use of diesel-driven and gas turbine-driven generators for peaking power, stand-by power, and in combination with steam plants.

The forecasting of future loads is a matter of the utmost importance to every electric utility company. A lot more work needs to be done on the defining of the factors involved and formulating a method of combining these factors by electric computer operation.

As load concentration and generating plant sizes increase, voltages used for transmission will also increase, unless appreciably different distribution or generating facilities become possible.

In the field of utilization, increased research is being aimed at further study of the applications of the heat pump, at developing a satisfactory electric incinerator, developing more electric garden tools, and at a basic study of the possibilities of obtaining a low-weight, high-capacity storage battery of moderate cost. Such a battery would make the electric automobile practical and might also have valuable applications in storing energy to level off peak loads, either for a customer or for the company's system as a whole.

These are just a few examples of the areas in which electric industry research is going on, but which might benefit from intensified effort. Some of these areas clearly are of no direct concern to the electrical manufacturers, or to anyone but an electric utility company. Characteristically, problems of system application or operation fall into this category. These are the problems which the electric utility companies must attack.

Another Question

This raises another question: how should the electric utility companies approach these problems? Should the research be carried out by one company, by a group of companies, or through a centrally directed program supported by all companies?

The subject is of the utmost importance to the future of the electric industry. Certainly each problem should be considered separately. Some probably are best suited to individual action, some to joint action by small groups of companies, some to action by the industry as a whole. But the general shape and direction of our industry's research activities deserves our serious attention and, in fact, are being carefully

studied by the Edison Electric Institute at the present time.

As the EEI research program is now conducted, suggested research projects are gathered by the Research Projects Committee from the engineering committees and other committees of the Institute. Assisting the Research Projects Committee in evaluating the proposals is a liaison group composed of representatives from each of the five engineering committees and from the Sales and Accounting Divisions. No project is submitted for approval by the Institute's Board until it has been studied by the appropriate committees as to its feasibility and value, and until a specific program, with estimated cost, has been prepared for it.

This method of operation assures that research undertaken by EEI will be devoted to projects which are of general interest to the member companies and which offer reasonable expectation of practical, beneficial results.

However, in recent years, the amount of research undertaken by the Institute has increased substantially. In addition, a survey of prospective research projects by the Research Projects Committee clearly indicates that this trend will not only continue but actually will accelerate if the necessary funds are available. But research conducted by the Institute is financed out of the Institute's general funds, and it has now reached proportions which will require additional funds, if the volume of work is to increase. Consequently, if the scope of the Institute's research program in the future is to be determined on the basis of the merits of projects which are proposed by the various committees, rather than by arbitrary financial limitations, some new method of financing the Institute's research program must be developed.

Expanded Research Program Studied

Therefore, the Institute's Board last December decided to investigate the possibilities of financing an expanded Institute research program on the basis of voluntary, sliding-scale contributions along the lines of the Live Better Electrically program. It now appears that the Board will be in a position to take action on proposals for such a program in September.

While provision will have to be made for some new method of financing Institute research, there appears to be every reason to continue the present controls exercised in deciding what projects should be undertaken. On the other hand, in view of the increasing importance of research and the rate at which this activity is expanding, consideration is being given to establishing a new division—the Research Division—within the EEI organization. This new division would have the same stature as the Engineering and Operating, the Sales, the Accounting, the Public, Employee and Investor Relations, and the General Divisions of EEI. It would be built around the present Research Projects Committee, which has been doing such a commendable job for our industry. Complete

(Continued on page 212)

Hard-Head Engineering

By J. F. Fairman

Senior Vice President, Consolidated Edison Co. of New York, Inc.

RECENTLY a reporter asked me if the country was on the "threshold of atomic power." I mentally tripped over that word, "threshold," for my mind went back over the succession of opening doors through which our industry has passed. It has been my experience that every threshold we crossed led to other doors still closed or only partly opened.

My thoughts have returned to that conversation since then and curiosity led me to rummage around in some back issues of our industry's trade magazines and to talk with some of my colleagues with whom I have worked over the years. This nostalgic exercise reinforced my growing appreciation of the solid contributions to the electric industry of what I choose to call "hard-head engineering."

Some of the things I came across in my journey through the library stacks happened a bit before I could have been expected to be aware of them. But they interested me nonetheless.

If there are symbols that typify our industry in most people's minds, I expect that steel transmission

An address before the Twenty-Eighth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 7, 1960.

towers marching across the countryside and hydro-electric dams are the most familiar. The history of high-tension transmission started with the problem of getting power from hydro sites to load centers, so that the two symbols are closely related. At the opening of the present century, power from Niagara was being transmitted to Buffalo at 11,000 volts. A line had been built in Washington State designed to operate at 25,000 volts. The Southern California Co. was proposing to build a 33,000-volt line.

Succession of Opening Doors

The step-by-step engineering of transmission lines is a succession of opening doors. Steel towers replaced wooden poles. Ways were found to reduce the weight and increase the span of conductors. As voltages went up, insulators had to be improved. Writing in the 50th anniversary issue of *Electrical World* magazine in 1924, Percy Thomas described how porcelain replaced glass as a first step. Then two, and even four, porcelain shells were cemented together, raising the upper limit of transmission voltage to 88,000.

At this point insulator pins became the limiting factor, but the engineers developed the suspension insulator and jumped voltage limits to 250,000. It was in the later Twenties that a 220,000-volt Pennsylvania-New Jersey tie was conceived and developed.

As utilities of that day came to realize the advantages of interconnections between electrical systems, the engineers put greater stress on maintaining the reliability of supply over the ties. Lightning was one of the bugaboos that was gradually brought under control. Now we stand at another threshold of high-voltage transmission—and the old problems face us anew—conductors, insulators, towers, hardware, lightning protection.

Things haven't changed too much in other facets of our industry. In 1924, our friends in California were pointing out that population in that state had increased 190 percent since 1895, while the population of the entire country had increased only 66 percent. I expect the results of the census this year will show a similar disparity. Even in California the more things change, the more they are the same.

The economics of central station supply had been pretty well proved out by 1924. The chief engineer of the Philadelphia Electric Co., in summing up the trend of contemporary design leading to further economies, wrote of heating of feed water by bleeder steam, heating air for combustion with flue gases, use of higher steam pressure and temperatures, reheat, and the use of purified water. Our mechanical engineers continue to wrestle with obtaining the most economic heat balance. Proponents of supercritical steam and the once-through boiler maintain a healthy controversy in our ranks. The chemical engineers have been weaned away from the gas industry to find some way of combating the ravages of purified water. With the advent of atomic power, and its demands for even purer water, they have had to develop new equipment that would accurately measure impurities in the few parts per billion range, as well as the means to achieve this degree of purity.

Less dramatic perhaps, but highly important are the improvements that have been made in some of the more homely pieces of equipment we use. The fundamental electromagnetic principles of the transformers built by Stanley and Westinghouse in 1885 have not changed, but the practical assembly of the beast is radically different. In 1930, a 500-kva network transformer weighed 20,000 pounds and required a manhole having a volume of at least 1000 cubic feet. Today both these measures have been cut in half—and the manhole is usually pre-cast rather than poured in place. The 1930 model network transformer had 15 gasketed openings which often failed and "breathed" air. This led to deterioration of the oil and forced regular maintenance of the transformers. Today a network transformer has no gaskets and the cooling oil is rarely fouled.

Simple, three-point suspension of these transformers from the walls of the manhole has brought a major reduction in corrosion as has the substitution of flat radiator panels for the older bird cage of cooling tubes. Insulation that withstands higher temperatures, elimination of surface defects in copper conductors which lead to insulation damage and failure, and the development of new cooling mediums have all contributed to reliable and relatively trouble-free equipment.

In 1934, the EEI and AEIC metering committees adopted 10 basic requirements for residential electric meters. The first and perhaps most important was:

> All manufacturers' meters shall be interchangeable and applicable to a mounting device which, in turn, should be suitable for use with all makes of meters.

I shudder when I think back to those days and remember that the four manufacturers of residential meters produced six different sizes to cover ratings from 5 to 75 amperes. And none of these meters was interchangeable as between manufacturers or even between successive types of the same manufacturer.

Situation Today

Compare the situation today. Only two meter ratings are required for loads up to 200 amperes, and we are rapidly approaching the larger of the two ratings as a single standard. Today we have the amazing situation—amazing when I remember the battles that accompanied its accomplishment—that any detachable watthour meter manufactured in this country, regardless of rating, will fit any socket mounting device made by American manufacturers.

All this development has been brought about while accuracy was improved and costs kept under strict control. More and more regulatory commissions have recognized the accuracy of the watthour meter and are permitting selective and sample testing instead of the periodic replacement requirements of earlier years. We would be hard put to find another major item of utility equipment which has increased as little in cost as the watthour meter.

In presenting past history, perhaps I have followed too narrowly developments in electrical engineering where I received my professional training. But I

have a strong conviction that engineers in other fields, or accountants, or construction men, or operating people would find a similiar pattern in the advances made in their areas of special competency.

And what pattern do I discern in my own field? It is one of step-by-step solving of problems. Some of them were solved by cut-and-try methods. Others resulted from the discovery of a new material, an improved alloy, a better manufacturing method. Some were attained by patiently pursuing the cooperation of designers, operators, engineers, purchasing agents, and policy-making executives of both utilities and manufacturers.

One has to look very closely, and define very loosely, to find anything that can be called a significant breakthrough—a breakthrough that reflects a radical change in scientific thought or that solves for all time the problems in a particular area. We in the utility industry have produced few who will rank with Copernicus, Newton, or Einstein. The names that stand out in the history of electricity are names of men who followed the path of evolution. Franklin and Ampere, Volta and Faraday, Ohm and Davy, Henry and Edison, Tesla and Steinmetz—each built on what was known, and introduced succeeding generations to new unknowns.

In some ways Edison epitomizes the flavor of our industry. Here in one man we find the quality that excited the enthusiasm of financiers; a promoter to rank with P. T. Barnum; a politician who did battle with New York's city fathers; an engineer who conceived an entire electrical system; an executive who directed the manufacture of its parts and its construction; the researcher who never stopped until he found a satisfactory filament for his electric lamp.

Today we have become specialists. None of us is called upon to exhibit as wide a range of talents as Edison. But if we are not as complete men as he, we should be better men in those areas where our interests lie. My particular concern is with the role of the "hard-head engineer" in the continuing advance of this industry.

Rhapsody of Advertising

In these days of space vehicles and astronauts, science and research are words with which to conjure. The publicist of a washing machine with a new control panel rhapsodizes about the wonders of research. The advertiser of an appliance with a stainless steel widget goes into raptures about advancing scientific frontiers. If I were a scientist or researcher, I think it would make me slightly sick.

I often wonder at the over-glamorization of some of the work we are doing. Today the electric industry is engaged in a broad attack to make atomic energy an economic alternative to other sources of heat. In other areas the industry is investigating methods of direct conversion of heat into electricity. The impressions created by the Sunday supplements and some of the advertising of this work are far different from those which come from carefully reading what responsible executives and engineers say about it, or from our own knowledge of the engineering problems involved.

I suppose that the discovery of atomic fission and its application to the generation of electricity represent the greatest single breakthrough in the history of our industry. Many of us undoubtedly over-reacted to its promise. But once the possibility, and the freedom to act upon it, existed, what did we find? We had opened one door only to be confronted with hundreds of others still closed. To problems of heat and temperatures and corrosion we had added radiation.

Engineers and Atomic Power

Every branch of engineering has been forced to re-examine its problems. I have already mentioned the demands atomic power has placed upon the chemical engineers. Metallurgists have had to familiarize themselves with the characteristics of exotic metals as well as to restudy the behavior of the old standbys. Mechanical engineers have had to revise sharply their concepts of plant design. The civil engineers have had to come up with new structures, and the builders with new techniques. Company executives have had to come to grips with long-term economics of still unproved concepts. And the industry has had to make room for the nuclear physicist and engineer.

Having burst through the door into the atomic age, we find we are back where we started—solving problems one at a time, fitting a piece here and a piece there. In a recent paper Ulysses M. Staebler and Donald H. Stewart of the Division of Reactor Development in the Atomic Energy Commission gave a lucid summary of what we still have to learn. They wrote:

> "Improvements are not expected to come suddenly through technical breakthroughs, but gradually through sound engineering improvements based on expanding technical knowledge. We will learn how to design plants with greater simplicity and less costly components. We will learn how to increase the maximum power that can be produced in a unit volume of reactor core. We will learn how to improve power distribution in the core so that a greater fraction of the volume is producing at its maximum capability. We will learn how to manufacture fuel more cheaply through improved techniques and increased volume. We will increase temperatures and thermal efficiencies so that more electricity or other useful energy will be available for each unit of thermal energy produced in the plant. We will learn more about factors which are critical to safe operation of reactors and will thus be able to reduce the conservatism of designs now associated with safety considerations. The combined effect of these improvements will result in reductions in each of the major cost components—capital costs, fuel costs and operating costs."

This is quite a prognosis, and its achievement will require the best efforts of the "hard-head engineers."

Who are these hard-heads in whom I put so much faith? Among them are some pure researchers. A few might even be classified as scientists. Most of

them are engineers working in or for this industry right now.

These men are already familiar with what has been accomplished by the electrical industry. They know what it means to deal with purchasing agents and suppliers' salesmen. They know that the best solution to an engineering problem is the one that best meets the requirements of many others. It must be realistic in terms of economics, construction, and operation, as well as engineering.

The Will to Go Ahead

But above all, the distinguishing mark of the hard-head engineer is the will to go ahead and try, the desire to get something done. The scientist often discharges his responsibility once he discovers the scientific principle. But the hard-head engineer must adapt the application of the principle to his own particular problem and be willing to spend the time and effort to get it accepted. He must be willing to risk his judgment against the necessary expenditure of money. He must be willing to accept the results of operating experience.

The hard-head engineer stands at the crossroads where science and economics meet. He has one of the most important jobs in this or any industry. Whether he works for a utility or a manufacturer, whether he works in the engineering department or not, he can make or break us.

* * * * *

One of the saddest remarks I came across in the old magazines was made by a writer who was discussing the development of hydroelectricity by government and industry in the West. He concluded that "the public ownership of our water powers in the United States is a dead issue."

In 1960, 36 years later, we still find ourselves at the ramparts. Soap boxes have never struck me as being very effective as either defensive or offensive weapons. As an industry we might ponder the admonition of a writer in a recent issue of the *Harvard Business Review* that "corporate leaders should expend as much effort in devising positive programs to solve evident social problems as they have frequently spent in stubborn opposition to the solutions proposed by other groups."

Positive Programs vs. Soap Boxes

I am heartened by evidence that positive programs and action can achieve what soap boxes never have. I believe the reaction of our industry to the challenge of atomic power fended off what might have become a massive governmental program. The Atomic Energy Commission's response to the work of the Industrial Reprocessing Group's study of atomic fuel reprocessing is encouraging. According to reports last April, AEC officials "confirmed . . . that the Commission is holding back expansion of fuel reprocessing capability at four locations" while IRG completes its study on whether to build a private plant. The policy was said to apply to others with serious plans and "was deliberately decided upon in this case to preclude the Commission's competing with private business." Southern California Edison's recently announced plans to build a 360,000-kilowatt pressurized water reactor is further proof of a willingness to move ahead.

The new spirit is not limited to atomic energy. The ferment within the industry to think and plan nationally to meet the electric loads of the future is on the positive side. The research and engineering going into extra-high-voltage transmission and direct conversion, backed by both utilities and manufacturers, are forward-looking programs in other areas. Each of you can undoubtedly add to the list.

As we move forward, it would be unfortunate if we over-glamorize our goals. If we, as an industry, succumb to the techniques of Madison Avenue, we risk the creation of false hopes among those we serve. If the achievement of one summit only brings into view another and steeper one, disillusionment may set in.

Day by Day Advance

None of our goals is going to be reached overnight. Their achievement will result from slogging, day by day work which has been characteristic of past advances we have made. When we have reached these new goals, we can expect to find new problems demanding new solutions.

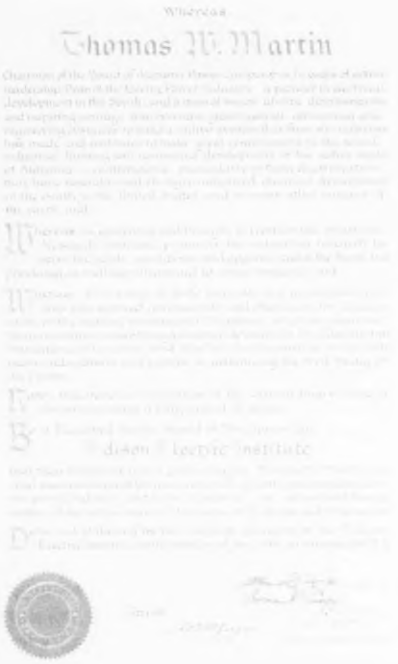
It may be difficult to get people excited about advances in watthour metering, or changes in powerhouse design, or refinements in network transformers. But the kind of work that brought these about is still required of us as we close in on competitive atomic power, or magnetohydrodynamics, or 600-kv transmission. People can be stimulated by our goals, but, without their respect and understanding for the work we must do to achieve them, the high hopes can dwindle as the weeks stretch into months and the months often into years.

Other Assets

The goals we set for ourselves are not our only asset. We also have a proven ability to deliver and a demonstrable will to get things done. We must depend on all three if the industry is to continue to flourish.

Our greatest asset is the people who will do the work and make the decisions. While I have chosen to highlight the qualities that go to make up the hard-head engineer, these qualities are not limited to the engineering departments. They are found in every part of the industry. They are qualities that deserve more recognition from us, for they are the qualities that can make this industry's future secure. Without these people and their work our voices are no more than "sounding brass and clanging cymbals."

In announcing, back in 1955, my own company's plans to build an atomic power plant, Roy Searing told the Joint Committee on Atomic Energy the decision was based on the desire "to get on with the job." I can think of no better hope for our industry than that we will continue to pick our goals wisely and then "get on with the job."


Thomas W. Martin

This certificate was presented to T. W. Martin, Chairman of Alabama Power Co., by the EEI Board of Directors.

Martin of Alabama Power Honored by the Institute

T. W. MARTIN, Chairman of the Board of Alabama Power Co., was honored at the EEI Convention for "his outstanding contributions to the electric power industry and to the industrial, civic, cultural and human welfare of his native state of Alabama, of the South and of the nation," by the EEI Board of Directors.

The resolution, presented at a meeting of the Board during the convention, reads as follows:

"WHEREAS, Thomas W. Martin, Chairman of the Board of Alabama Power Co., is, in years of active leadership, Dean of the Electric Power Industry; a pioneer in electrical development in the South, and a man of vision, ability, determination and inspiring courage, who overcame great financial, commercial and engineering obstacles to build a utility system that from its inception has made and continues to make great contributions to the sound industrial, farming and commercial development of his native state of Alabama—contributions, particularly in farm electrification, that have favorably and strongly influenced electrical development in the South, in the

(*Continued on page* 241)

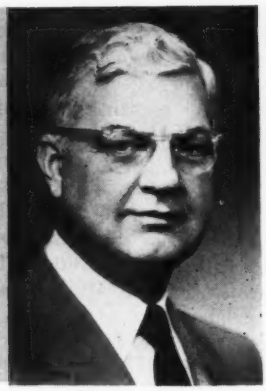
Citation awarded to T. W. Martin, Chairman of the Board of Alabama Power Co., is presented by Allen S. King, EEI President, to W. C. Green, Alabama Power Executive Vice President, who accepted for Mr. Martin.

Thomas W. Martin

Patterns for Tomorrow's Power Needs

By C. E. Oakes

Chairman of the Board, Pennsylvania Power & Light Co.



THE start of a new decade is a good time to pause and take stock as to where we are and where we are going.

The investor-owned utilities have the responsibility to:

- Furnish an abundant supply of electricity for use in the areas they serve.
- Anticipate future needs well in advance of the time the power will be required.
- Give first-class service at the lowest practicable price to their customers.
- Conduct research and development of all phases of their business in the public interest.
- Assure efficient operation and management by attracting the services of capable and well-trained men and women.
- Contribute their full share to the support of our government and the defense of our country.
- Support sound regulation by regulatory bodies at Federal, state and local levels.
- Merit the confidence of:
  1. Their customers.
  2. The investors in their securities.
  3. The general public.
- In every way, be good citizens.

What does "investor-owned" mean as applied to the electric industry? The Edison Electric Institute studies indicate there are about 3.8 million owners of stock of the investor-owned electric companies in the United States—the direct owners of companies just like yours and mine. But there are many more people who have a very great financial interest in our companies.

Approximately one-third of the outstanding debt of America's electric, gas, water, and communication facilities is held by the nation's life insurance companies. Analysis shows that well over half of the $16 billion so invested for the 124 million life insurance policy holders is in electric company securities.

Then there are the more than 22 million depositors in the savings banks of the country, who likewise have a stake in the electric business as substantial amounts of their savings have been placed in power and light securities. Millions of workers whose major support in their old age will come from private pension funds, together with the beneficiaries of trust funds of all kinds, also have a large interest in the investor-owned utilities because these trust funds hold substantial amounts of their securities. Thus almost everyone in the nation has a financial interest in the operation of the electric companies—the investor-owned electric companies.

The investor-owned companies are rightfully proud of the contribution they have made to the nation's economy. They have pioneered in the development of the industry. They have built well. Through technological improvements and good management they have done an outstanding job in holding down the price of electricity despite the wave of inflation that has swept over our country. They have merited the confidence of customers, investors and the general public.

Utilities Must Plan Ahead

The utilities cannot wait for the market for power to develop and then proceed to build to meet it. They must plan far ahead so that the public can be assured of always having available an abundant supply of electric power.

The investor-owned companies have been highly successful in doing this for the record shows that no power shortages of consequence have occurred in the areas they serve, even under the stress of war. For a number of years the industry has studied its capacity situation and provided the public with factual information through the EEI Electric Power Survey Committee reports.

To date we have met our responsibilities in full. We confidently expect to do so in the years ahead. Each company is well informed as to where it is, and where it is going. Every utility keeps up-to-date forecasts of the power needs of its area, and has formulated plans to meet its future power requirements.

To assemble this information and thinking on an industry basis, EEI has been reviewing past history, surveying forecasts made by economists of national standing, and preparing estimates of its own as to

An address before the Twenty-Eighth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 7, 1960.

what is ahead for the entire industry and for the investor-owned electric utility companies in particular. Definite figures have been prepared for 1970 and 1980, with some general estimates even as far ahead as the year 2000 for certain phases of the study.

Let us look at some of these forecasts as a guide to what is ahead for the electric industry, and the public it serves. But first let us establish the solid basis on which these forecasts rest. (Fig. 1).

In 1959, a total of 795 billion kilowatt-hours of electricity was generated in the United States. This total is the one furnished to the United Nations for use in international comparisons.

Of this great amount, 85 billion kwhr, or a little more than one-tenth, were produced by industries for their own use. The remaining 710 billion kwhr were produced by utilities for resale to ultimate consumers.

The utility industry is in two parts—the investor-owned utilities on the one hand, and government bodies in the power business along with rural electric cooperatives on the other. Of the utility total, the investor-owned companies generated 544 billion kwhr, and the government bodies and electric cooperatives produced the remaining 166 billion.

The two sections of the utility industry are interrelated in that power and energy are bought and sold between them. Slightly different percentages prevail with other measures of size: a convenient over-all figure is about three-quarters for investor-owned companies, and about one-quarter for government bodies and co-ops.

The use of electric power on a national basis is influenced by the development and requirements of business and industry, by the growth in population and the rise in the level of living standards. These are the underlying causes which affect the need for electricity—causes which are closely related to the expansion of the nation's economy.

Fig. 2 shows the record of population growth since the turn of the century. The Census Bureau has recently prepared new forecasts of the probable population of this country. The census figures are based on maximum and minimum fertility. EEI has taken figures in between—namely, 208 million people in 1970 and 245 million in 1980. The Institute advances 340 million people as a likely figure for the year 2000.

Gross national product from 1929 to 1959 is shown in Fig. 3. The bottom projection to 1970 and 1980 is at 2.9 percent, which is the average rate of increase from 1929 to 1959. Some people talk about a rate of growth as high as 5 percent. The 3.57 percent increase, which is the one used in the EEI study, represents what is probably a more realistic appraisal, as it is the average rate of increase for 1946 through 1958—the postwar period.

Gross national product, as you know, represents the market value of all the goods and services produced in the United States. For more accurate comparative purposes it is put in terms of constant dollars—in this case 1959 is used.

An analysis of the historical trends in kilowatt-hour sales shows the existence of close relationships between sales in the various customer classifications and certain components of gross national product.

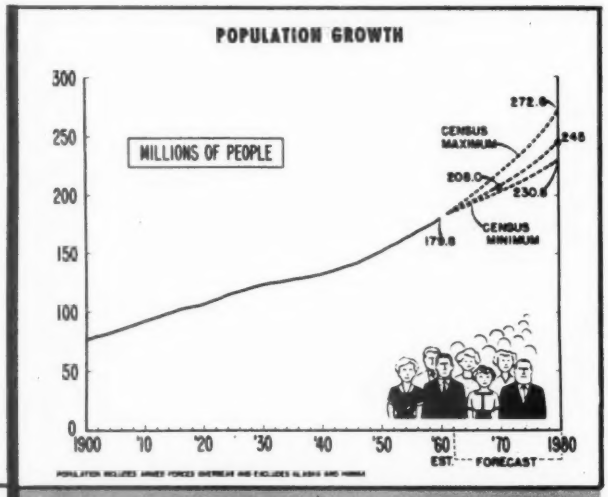


Figure 2

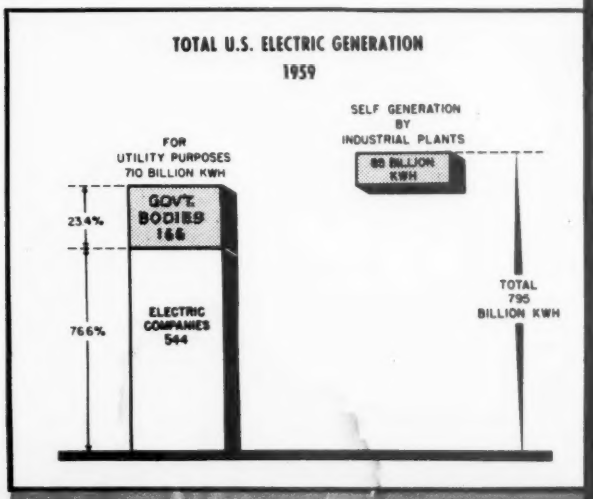


Figure 1

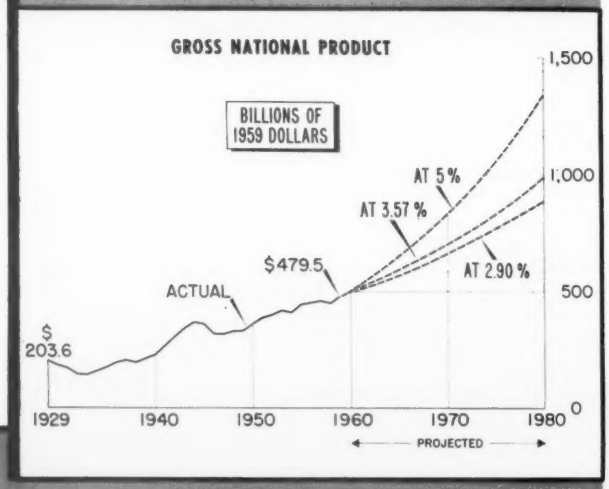


Figure 3

For example, residential sales are related to disposable income, i.e., the income people have left after tax payments to government. Commercial kilowatt-hours tie in with personal consumption expenditures as represented by the market value of goods and services purchased by individuals. Industrial electric sales follow closely the industrial activity throughout the country which is measured by the Federal Reserve Board index of industrial production. Thus, we believe these forecasts for the industry rest on a solid foundation.

The task of extending electric lines to the American public is virtually complete. Future gains in power sold to home and farm will largely come from an expanding population and from increased use.

In the average residential use of electricity in this country, some utilities have already passed the nationwide average-use forecast for 1970. Many individual homes are now using more than the national average forecast for 1980—13,000 kwhr (Fig. 4).

An average size, all-electric home will use over 20,000 kwhr a year. So even in 1980 there will still be a big market for the sale of electric power in the households of our country.

Increased productivity in shop and office has as one of its main components the use of electricity. If our nation is going to reach the economic levels anticipated for it, with the relatively limited work force and working hours available for the purpose, marked increase in productivity of the individual worker will be essential. The end result will be the use of more and more electric power.

The use of power per employed worker is scheduled to rise from around 12,000 kwhr at the end of 1959 to more than 22,000 by 1980 (Fig. 5).

Fig. 6 shows the anticipated per capita require-

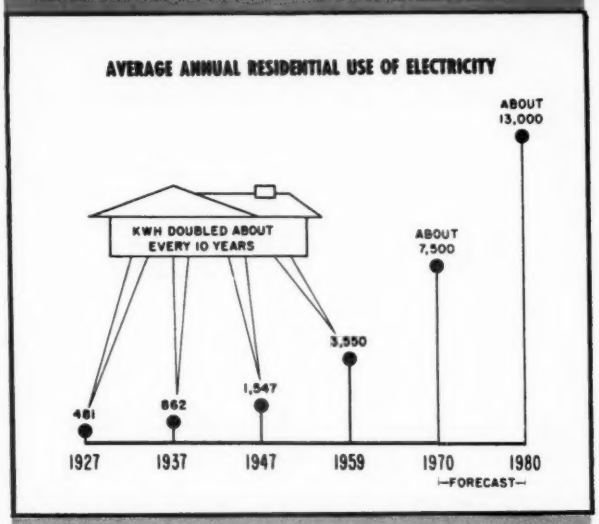


Figure 4

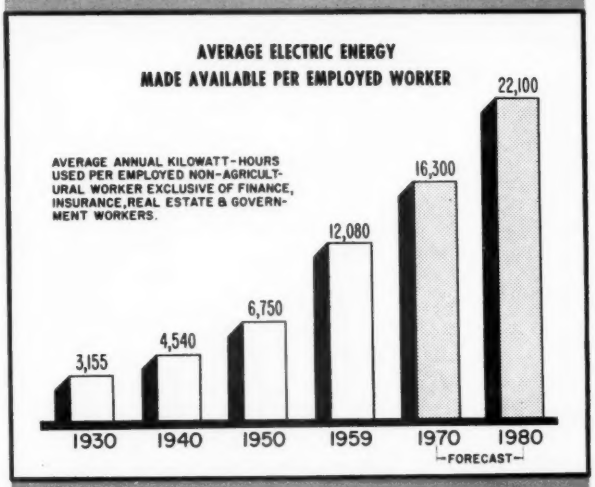


Figure 5

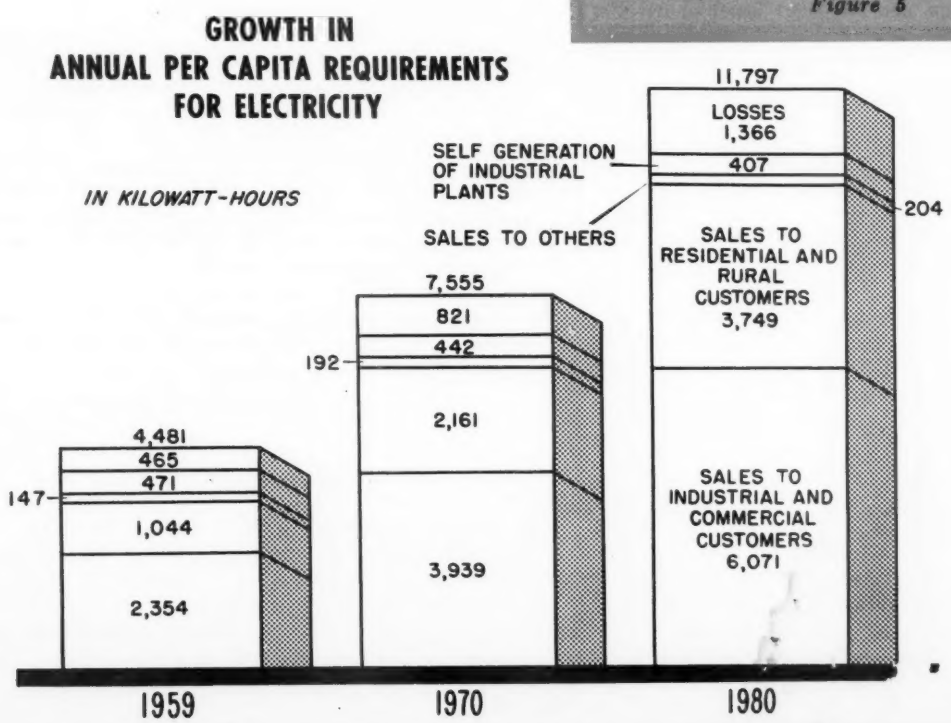


Figure 6

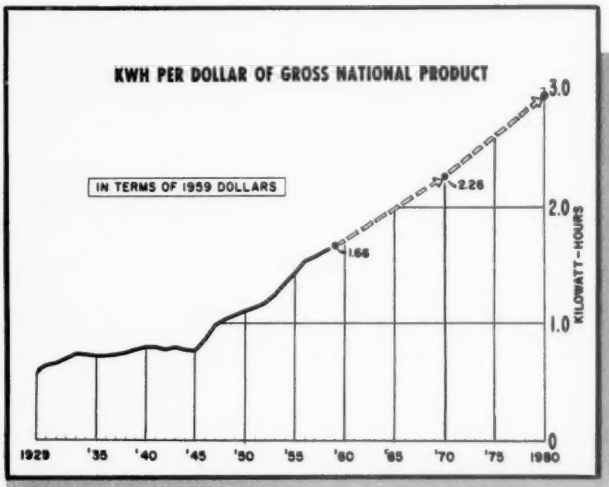


Figure 7

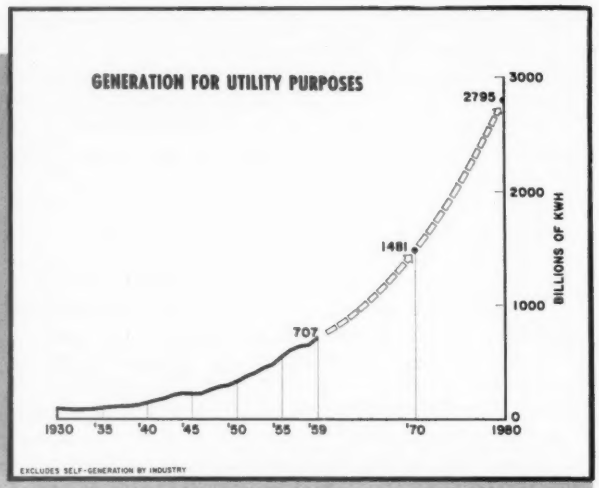


Figure 8

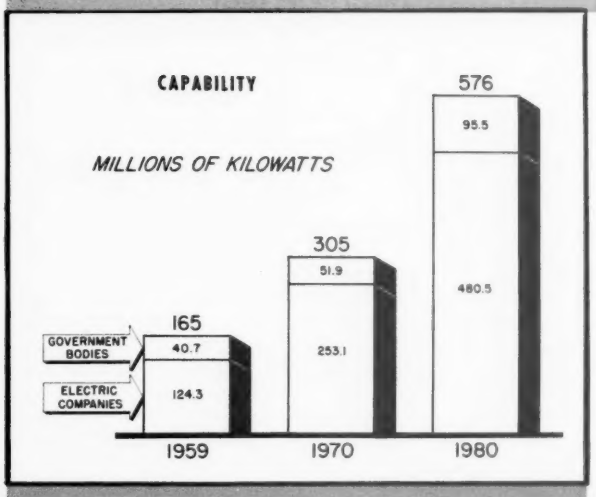


Figure 9

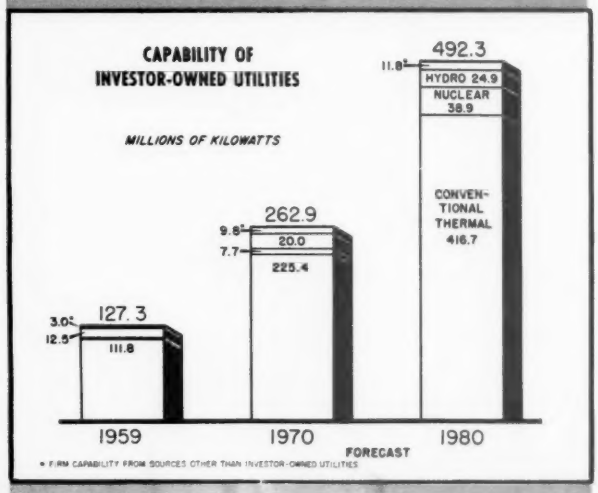


Figure 10

ments for electricity, compared with the actual figures for 1959. I have added transmission and distribution losses to get a figure that ties in to the amount of energy that will be required to meet the needs of our nation.

Per-capita use is a good indicator of a nation's total productive capacity and the well-being of its people. Hence this is an encouraging picture.

The economists foresee for 1980 a value of our nation's goods and services of nearly $1 trillion in terms of constant dollars—double today's figure. To reach this level will require a greatly expanded use of electricity—almost three kwhr per dollar of gross national product in 1980 as compared to only $1\frac{2}{3}$ kwhr today (Fig. 7).

Fig. 8 shows the total amount generated for utility purposes from 1930 through 1959, compared with the power generation forecast for 1970 and 1980.

Let us visualize what this growth means. The electric industry will generate as much energy in the next 10 years as it has produced during its entire history to date.

And, in the decade of the Seventies, the estimates show a production of over three times the energy that it has turned out from the day of Edison's development of the incandescent lamp to the end of 1959.

One of the most important things our industry's study group did was to determine how much power plant capability was needed to produce this vast amount of energy and how it would be made up.

Fig. 9 shows the anticipated capabilitiy necessary to produce the amount of energy required to supply the needs of our people in 1970 and 1980. For comparison purposes, we have shown the situation as it existed at the end of 1959.

The breakdown of capability between the investor-owned companies and the government bodies and cooperatives is also shown.

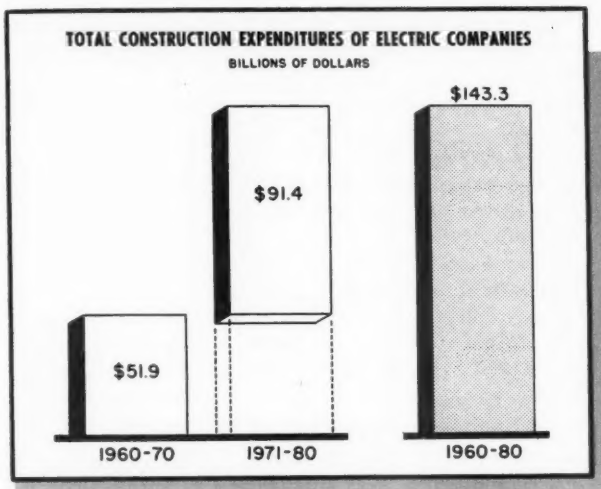


Figure 11

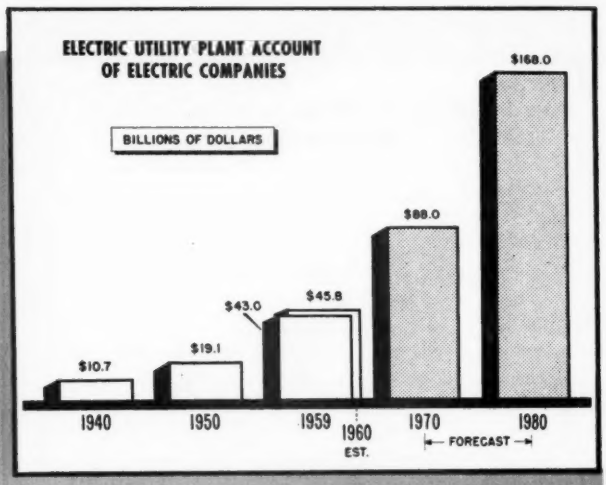


Figure 12

By 1980, 411 millions of kilowatts of new capability must be built, of which 87 percent is the job of the investor-owned utilities.

The figures shown for the investor-owned utilities represent the long-range plans of the companies to meet the needs of the areas they serve. The forecasts show a substantial amount of capability to be installed by government and cooperatives.

There is no real need for government to install this capacity. I want to make this very plain. The investor-owned utilities stand ready and able to meet in full the future power needs of the country. The investor-owned companies are ready to enlarge their plans to supply all the necessary facilities, including the part of the program indicated for public power on the chart, and will do so if given the opportunity. This would result in enormous savings in tax dollars, which will otherwise be spent needlessly.

We anticipate that the kilowatts of capability owned by the investor-owner companies in 1970 and 1980 will be made up as shown in Fig. 10. For background, comparable figures for 1959 are shown.

It seems evident that the main reliance for the power supply of the foreseeable future will be modern fuel-burning, large-scale generating stations. Of the more than 356 million kwhr of capability to be added by the investor-owned utilities up to 1980, 85 percent will be of conventional, fuel-burning type.

Nuclear power is on everybody's mind. A monumental amount of work has been and is being done to develop it in a sound business-like way. But it must be appreciated that the present state of the nuclear power art is today about where the steam-electric turbine was in 1920.

The industry estimates for 1980 an aggregate of close to 40 million kw of nuclear power, based on what is presently known of the progress in nuclear technology. However, if research and development overcome the competitive gap between nuclear and fossil fuel power at a faster pace than is now anticipated, the installed nuclear power capability could be substantially larger.

In another area, a great deal of research is being carried out in the direct generation of electric energy from fuel sources, thereby eliminating the steam turbine-generator as we know it.

As the years go by more will be heard about direct generating sources, such as solar, thermoelectric, magnetohydrodynamics, thermionic, fuel-cell and fusion.

It hardly seems possible that any of these methods can get out of the laboratory in the next 10 years insofar as central station power is concerned. But while only a few short years ago we foresaw nuclear energy as the only fuel on the horizon to offer competition to fossil fuels, we now envision that nuclear fuel itself may have real competition 15 or 20 years hence. And furthermore, we are now assured that there will be ample fuel sources to power American industry and civil life for hundreds of years to come.

These advances in research of new methods of power generation emphasize that the development of nuclear power, as well as these still newer sources, must be appraised from the competitive viewpoint and in a considered, judicious and positive way.

What will be the money requirements to carry out the program I have just outlined? (Fig. 11)

In the 11-year period, 1960 through 1970, the construction expenditures on electric property of the investor-owned utility companies will total nearly $52 billion—constant dollars at the present level of value.

In the 10-year period, 1971 through 1980, the total will be over $91 billion.

This adds up to a total for the 21-year period of $143 billion, which is 3⅓ times the total electric plant account of the companies at the end of 1959!

At the end of 1959, plant account stood at $43 billion (Fig. 12). By the end of 1980, the plant account should be $168 billion—16 times what the book value was in 1940, and nearly four times the estimated book value at the end of 1960.

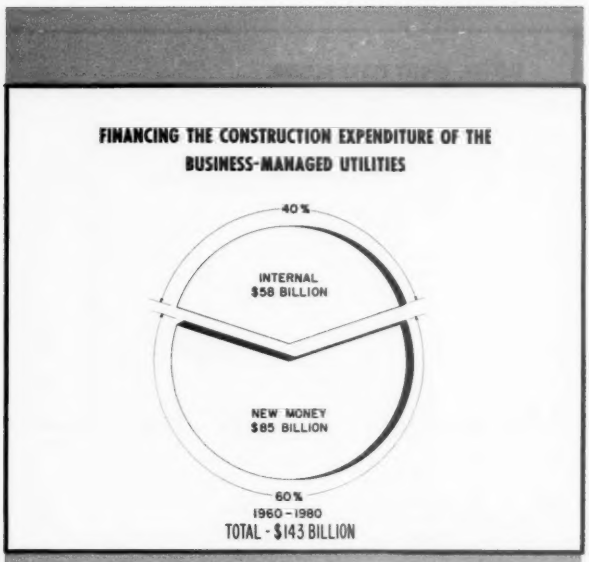


Figure 13

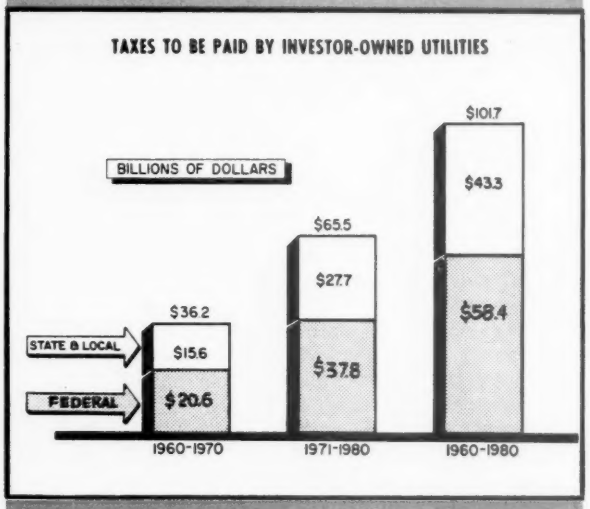


Figure 14

This is a very striking picture of the growth ahead of the investor-owned companies. It immediately raises the question of where the funds will come from to provide this vast addition to the industry's electric facilities. You will agree that $143.3 billion is a formidable figure.

With a continued sound economy, fair regulatory treatment of the utilities of the country—and assuming a constant value of the dollar—the electric companies should be able to generate in the day-to-day operation of the business about $58 billion—around 40 percent of the total needed (Fig. 13). The rest will be new money—$85 billion—which will have to come from the sale of securities to the investing public—a staggering sum to be sure. But there seems to be no reason why this can not be done with success and with proper maintenance of sound capitalization ratios and fair dividend treatment of the equity investor. Should inflation continue, however, a much larger amount of new money would be needed, as a smaller proportion would be generated by the business.

The study indicates that the investor-owned utilities are prepared to meet fully their responsibilities to the people of our country.

They are prepared to raise their own capital in the free money market, without recourse to the public treasury.

They have adequate plans to assure ample electric power in future years.

They will continue their pioneering so that the people of this country will receive in full measure the benefits of research and new discoveries in the utility field.

And unless inflation gets out of hand, they will be able to continue to hold the price line which, on the whole, they have been more than successful in doing as compared to general price levels.

The vast size of the tax bill, based on present tax rates, during the years to come—a total of nearly $102 billion in the 21-year period I have shown—is significant (Fig. 14).

Of course these taxes are included as an element in the cost to serve the customer. We and, I think, our customers, are willing to pay our fair share of taxes, but we think all business, including government business enterprises, as a matter of equality, should also bear their share. But thus far, government business undertakings have failed to do so.

Of late, we have been hearing a good bit about power pooling. Some of the people who have visited Russia have been ostensibly impressed by what the Soviet planners have in mind for the future along this line.

Originated in U. S.

The utilities of the United States originated the pooling idea many years ago, and have developed it until nearly all sections of the country are enjoying the benefits resulting therefrom. This development is still going on.

Nearly all of the present operating utilities are the result of integrating, over a 60-year period, hundreds of small isolated systems, merging them and pooling their resources.

In addition to the integration that has resulted in the electric companies of today, various utilities have interconnected and pooled their generating facilities to obtain further economies.

Pennsylvania Power & Light Co. offers a good example of what has taken place many times over the years in this field.

Step by step, over 900 separate parts were consolidated to form Pennsylvania Power & Light as it now exists.

Fig. 15 illustrates the next step.

Over 36 years ago, in 1924, representatives of Public Service Electric & Gas, Philadelphia Electric, and Pennsylvania Power & Light, met to investigate the feasibility and desirability of a high-voltage transmission interconnection among the companies. As a

result of this pioneering, a 220,000-volt backbone loop was built. At the time, this was the highest voltage in use in this country.

Then, step by step, as illustrated on the chart, the present regional power pool, consisting of 13 companies with a total generating capability of 13.5 million kw, was developed. The strengthening and expanding process is going on today. As recently as May 1 of this year, Potomac Electric Power Co. joined the pool. I can assure you that we do not intend to stop where we now are. We plan to continue to improve our pooling facilities and operations, which have proved to be very beneficial to the customers of all the participants.

Parenthetically, I would like to give some figures about the companies in this power pool. Their aggregate capability at the end of 1959 was 12 million kw. Tennessee Valley Authority's capability as of the same date was 11.7 million kw.

In 1958, the 12 participants then in our power pool set aside a total of more than $183 million for taxes.

Of this tremendous sum nearly $113 million represented Federal income taxes, and about $70 million represented other taxes.

TVA and its resale distributors paid no Federal income taxes. TVA made a payment of nearly $6 million in lieu of state and local taxes, and its resale distributors made a similar payment of slightly over $9 million.

In other words, the taxes of the 12 power pool participants amounted to over 12 times the total payments made by TVA and its resale distributors in lieu of taxes.

Today there are many other similar power pools throughout this country. They range from formal organizations to informal exchanges of economy power, power purchase agreements or simple emergency service connections. Their histories resemble the one I have just outlined. They, too, continue to expand. For example, the major investor-owned utilities in New York State have just announced a plan to build a major tie between upstate New York and the metropolitan area.

Utah Power & Light Co. and Arizona Public Service Co. are preparing to interconnect their electric systems to take advantage of load diversity.

There are many other examples.

All of these ties have one main objective, which is to furnish good service to the public at the lowest possible rates. They are so much a part of our daily

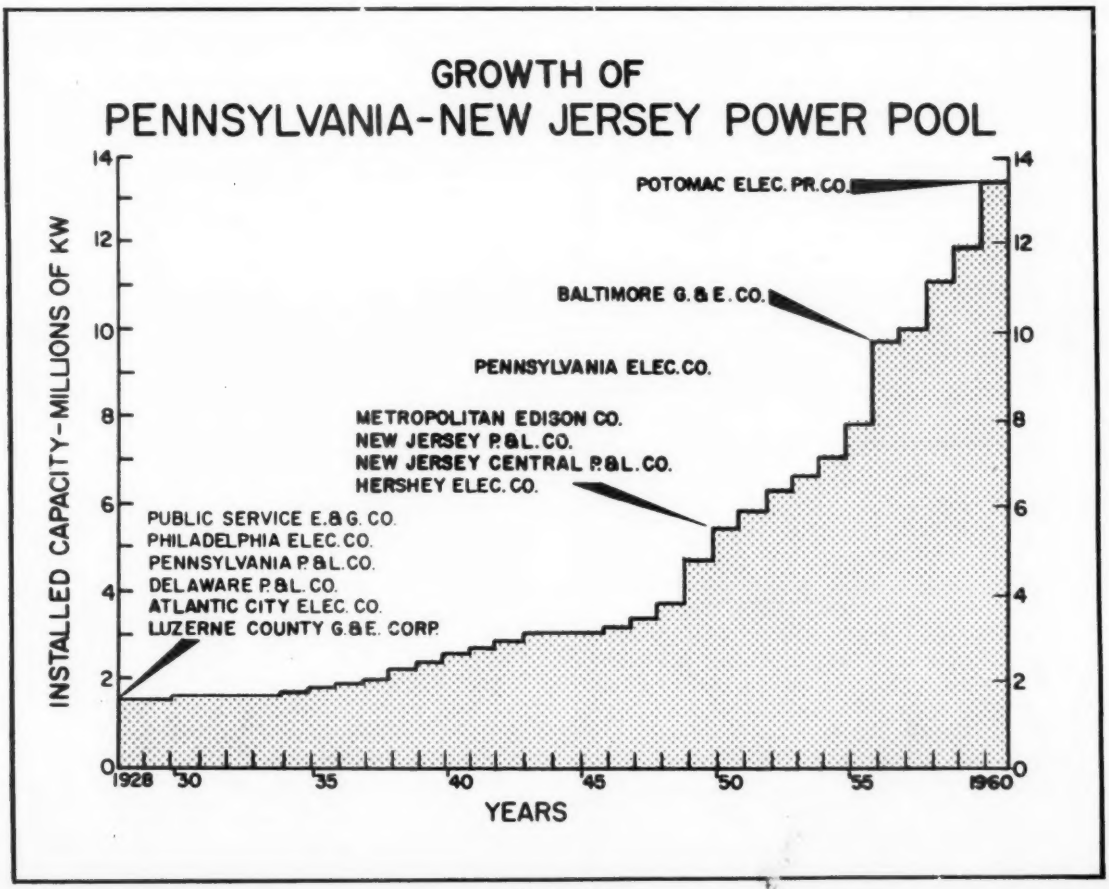


Figure 15

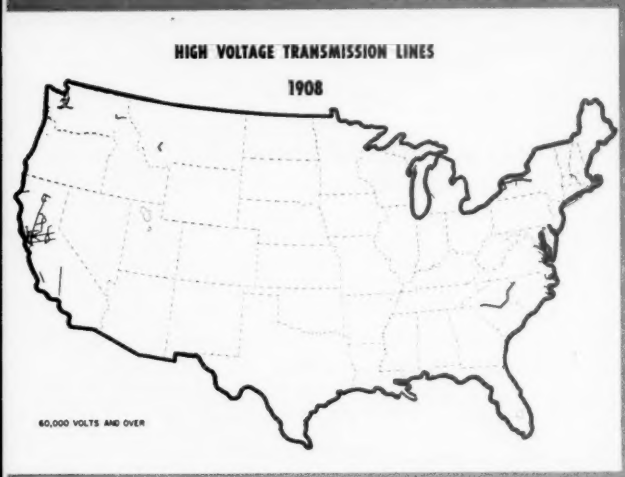


Figure 16

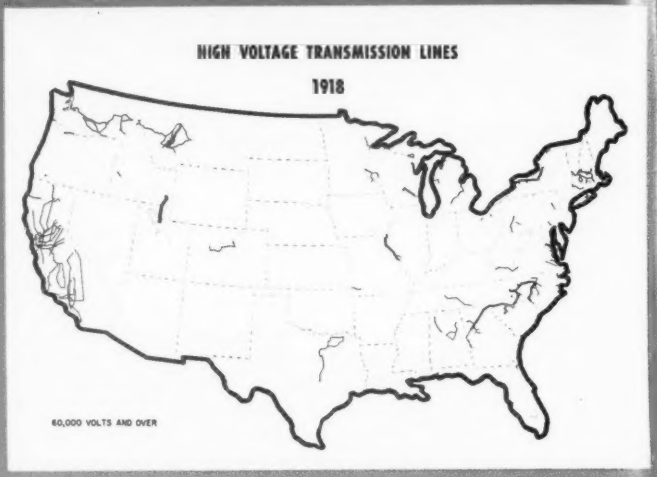


Figure 17

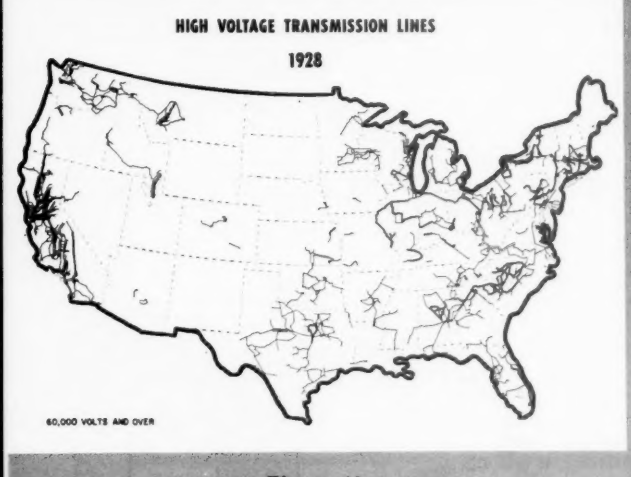


Figure 18

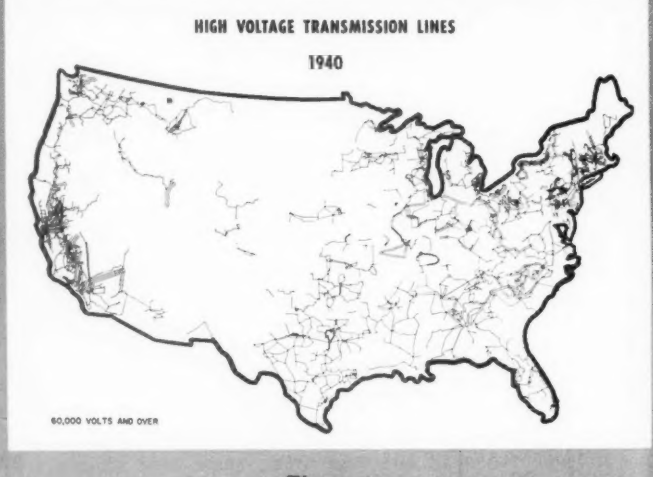


Figure 19

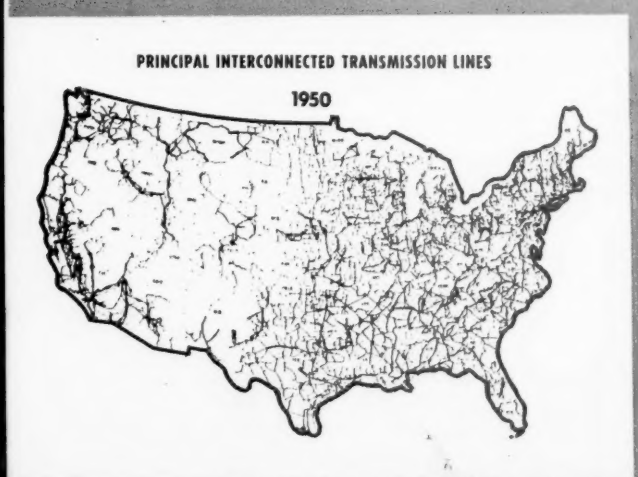


Figure 20

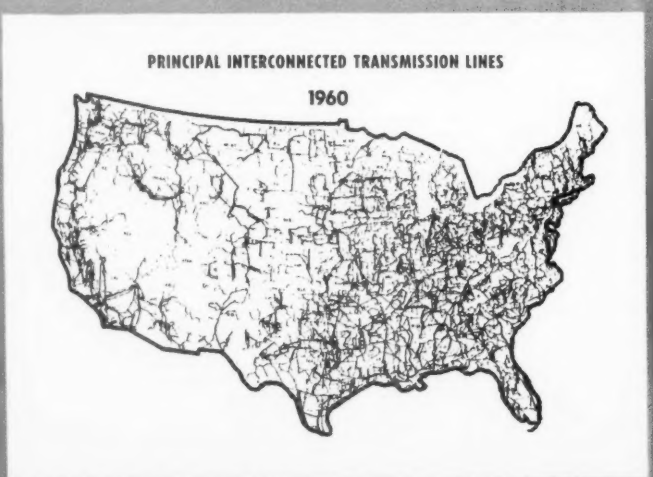


Figure 21

operations in this country that we take them for granted.

Sometimes it is instructive to look at the record. Let us see what it shows. Fig. 16 shows the transmission system in the United States in 1908, which was 52 years ago. A start on interconnections had already been made then.

Fig. 17 shows the situation in 1918—only 10 years later. The reason for the early high tension lines in the Pacific Coast area was that many of the early generating stations in that section were hydro, and the lines were required to tie them together and get power to the load centers.

Pooling really advanced in the next 10 years, as is shown by Fig. 18. The beginning of the Pennsylvania-New Jersey power pool can be seen. Backbone transmission was being built throughout the nation, especially in the East and on the West Coast.

Fig. 19 shows the high lines in existence in 1940. Area interconnections were far advanced by that prewar year. One of the main reasons for the ability of the utilities to meet the full power needs of the country throughout the war period, was the existence of this great grid.

Another big step forward appears on the 1950 map, which shows some lines under 60,000 volts that were important parts of the national network (Fig. 20).

Fig. 21 shows the situation today. It also is different from the earlier maps in that some of the lower voltage transmission lines are shown in addition to the backbone transmission. It illustrates the wide coverage of the transmission system of this country —a huge network of power lines.

Fig. 22 shows the mileage of the transmission lines of the United States of 22,000 volts and over, together with the lines of 60,000 volts and over. A great expansion has taken place since 1950.

As the generating capacity grows to take care of the expanding load, the interconnection and pooling process is accelerating all over the United States.

Although conditions are constantly changing, the basic benefits of interconnection and pooling remain much the same. Not all these benefits are possible in every situation. I have listed nine major benefits; there are other special benefits that can be realized in individual instances. Here is my list:

- Savings in production expenses, where differentials exist in fuel cost, efficiency and operating expenses other than fuel. The general practice is to place the low cost stations on base load, and to schedule the others in the order of their efficiency.

- Lower transmission losses. Line voltages to be selected have a direct relation to the amount of power involved, the distances to load centers, and the value of the losses.

- Reduction in the amount of reserve generating capacity. This advantage is especially important today because of the large-sized units being installed.

- Taking advantage of load diversity, including differences in time zones. The growth in summer peak demands emphasizes the importance of this factor.

- Greater leeway in planned maintenance. The ability to draw on spare capacity in the pool gives greater flexibility in the increasingly difficult task of scheduling maintenance.

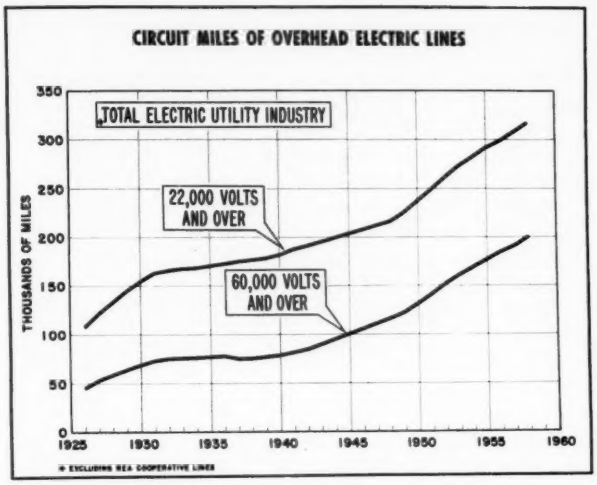


Figure 22

- Ability to install larger and more efficient generating units. This is of special advantage to smaller utilities that cannot by themselves justify installing generating units of optimum size.

- Improved emergency service. A pool gives added insurance to the maintenance of service during catastrophies and accidents to major equipment.

- Contribution to national defense. In the event of bombing or sabotage, a pool will greatly aid in maintaining service. It will also give greater flexibility to locating defense projects.

- Making possible full use of the various low load factor hydros now in existence and to be built in the future. Pumped storage projects, where conditions are favorable, offer advantages to the pooled systems of the future.

As I look at the future of the investor-owned utilities, these are some of the opportunities that we have before us.

As the loads grow and the capacity increases, further expansion of power pooling offers possibilities of additional savings and improved operation. This growth will be on a regional basis, and will be governed as to extent and type by local conditions. The process will be aided by long-range planning of transmission lines and interconnections. The most successful power pools of today exist in situations where this has been done in the past.

Savings in capital expenditures can be obtained through standardization of turbines and generators over the entire range of sizes used by the industry. The possibilities seem to be especially favorable in respect to large-sized units operating under high pressures and temperatures. The standardization process should be related not only to sizes, but also to pressures and temperatures.

The idea could well be extended to other items of equipment.

To carry out this idea, the industry should not ex-

pect the manufacturers alone to do the job. The companies must take the lead in this matter, but they must take great care that standardization does not develop into a "road block" to future technological progress.

As the demand grows for additional power, great use will be made of the maximum size of units suitable for each situation. Greater opportunities will present themselves to locate on advantageous sites. in respect to load centers, fuel, water and the many other factors involved in power plant location.

Manufacturers tell us that they are willing and able to make a unit of a million kw, and that there is no technical barrier to line voltages of one million volts or even higher.

For the Good of Both

It is my belief that it would be advantageous both to the manufacturers and the utilities if the two got together and scheduled the new units to be installed in such a manner that the manufacturing facilities would have a uniform rate of production.

As we push ahead into the last half of this century, we can look for a rapidly increasing economic momentum. Population will continue to grow. Business and industry promise substantial expansion. Research and scientific development offer assurance of even greater progress in the coming years than we have seen in the past.

But to realize fully what the future holds depends in great measure on what we do today. Wise long-range planning in the use of our resources is needed. It is toward this end that our industry is taking this look ahead. What we have projected is a realistic appraisal. The investor-owned utilities are well prepared to take care of the greatly augmented power needs of the future, standing on their own feet, and to do so without recourse to the public treasury.

I am confident that we merit the public's support necessary to carry out the program that I have outlined.

Must Tell Story

But we must tell our story. Our own customers do not know these facts and we must accept the responsibility to see to it that they are informed.

A recent opinion survey for the Electric Companies Public Information Program, based on a properly selected sample of electric company customers, shows that only 52 percent of our customers believe that our companies can be relied upon to provide all the power that is needed for our country's future. Some 29 percent believe that government help is required. And 19 percent do not know if our companies can be relied upon or whether government help is necessary.

Here is the key fact. More than two-thirds of the 29 percent who said that government help is needed took this position because they feel the job to be done is "too big" or "too expensive" for our companies to handle. Here again we have proof that the lack of widespread knowledge of the facts about our industry's past record, our plans, our capabilities and our resources, is what is really hurting us. And it is hurting us much more than any ideological bias against our industry, yet is much easier to correct.

Familiarity Is Not the Test

So let us tell the story of our industry's capability to meet tomorrow's power needs. And let us continue to bear in mind that though this story may come to be old and familiar to us, this is not the test. The criterion is widespread knowledge and information about the electric industry. We must keep at our information work and programs until the evidence at hand much more fully demonstrates that in this area we have done the job that is before us to do.

The Role of Research in the Electric Industry

(*Continued from page* 198)

control over the program would lie with the Research Division and the EEI Board of Directors.

A Research Division within the EEI framework is a natural outgrowth of the industry's present research activities. Its formation would give research projects their proper standing among industry activities. At the same time, it would strengthen the framework which, at some point in the future, might be called upon to bear the added weight of an enlarged research effort. Such an organization would not replace or conflict with the research activities of individual electric companies or with the activities undertaken by small groups of companies. It would, however, provide a regular, accessible medium for the exchange of information between companies concerning their research activities. It would also make it possible for many of the smaller companies which are not able to do research work of their own to participate in this important work. Nor would such an organization impede the competition between the electrical manufacturers in the research field. This competition has proved too valuable to be disrupted in any way.

Certainly a substantial, forward-looking research program carefully directed in the manner I have described, and properly publicized, would do much to enhance the status of our industry in the eyes of our customers, investors, and the public in general.

Research has played a great part in the progress of the electric industry. By increasing our research effort and by organizing ourselves to carry out this research even more effectively, our industry can continue to spread the benefits of electric service in a constantly multiplying variety of ways. The results will be at least two-fold: our industry will be strengthened and the public will be better served.

Panel Discussion:

Financing the Sixties' Expansion Program

Introduction

By H. H. Scaff

Vice President, Ebasco Services Inc.

THE business-managed electric utility company executives at this Convention have discussed the dimensions of the job ahead of them in meeting the future power needs of the areas they serve.

However, some very important questions remain unanswered. For instance:

- Will the money required to meet the expansion program be available to the utilities?
- Where will the money come from?
- What can the utilities do to make their securities more attractive?

Four outstanding financial authorities will endeavor to throw light on these vital questions.

Listening to the various presentations during the first three sessions of this convention, I had difficulty in visualizing, when viewed in the light of past history, the magnitude of the construction program that is ahead and the extent of its impact on the companies.

In an effort to bring these matters into perspective, we have prepared five charts summarizing the forecasts that have been presented. The figures for the companies cover only their electric operations. The future money requirements are in terms of 1959 dollars.

Fig. 1 shows the number of kilowatts of capability the electric companies expect to install in the next 21 years. For the 11-year period 1960 through 1970 the figure is 128.8 million kw. This means that during the next 11 years the electric companies will install more kilowatts of capability than they had in service at the end of 1959.

The figure for the 10-year period 1971 through 1980 is 227.4 million kw of capability!

To say that this will be a remarkable achievement seems quite inadequate.

The total for the 21 years is 356.2 million kw, which is nearly three times the total capability at the end of 1959!

Fig. 2 shows the cost of the electric utility plant account at Dec. 31, 1959, and the estimated cost of constructing the power plants, transmission lines, distribution systems and other operating facilities which the companies will have to build in the next 24 years, if they are to be successful in meeting the forecasted power requirements for the period.

Again, we find a most remarkable picture. The companies will spend $51.9 billion, which is 20 percent more for plant expansion, during the next 11

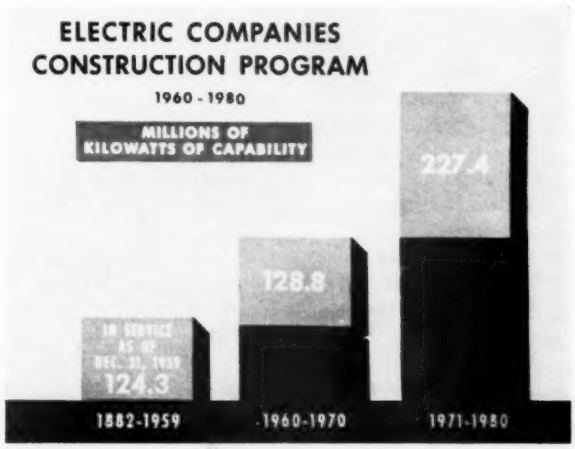


Figure 1

Presented before the Twenty-Eighth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 8, 1960.

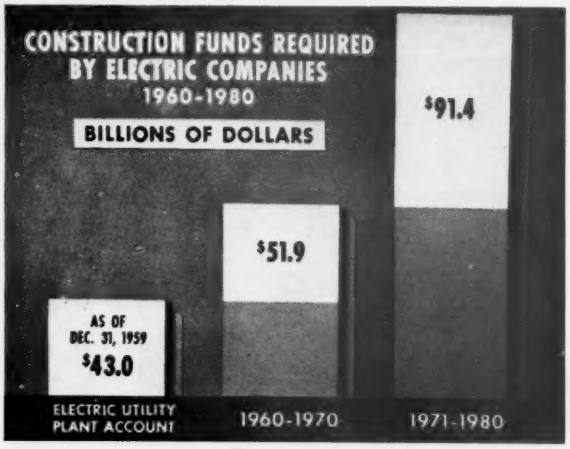


Figure 2

Figure 3

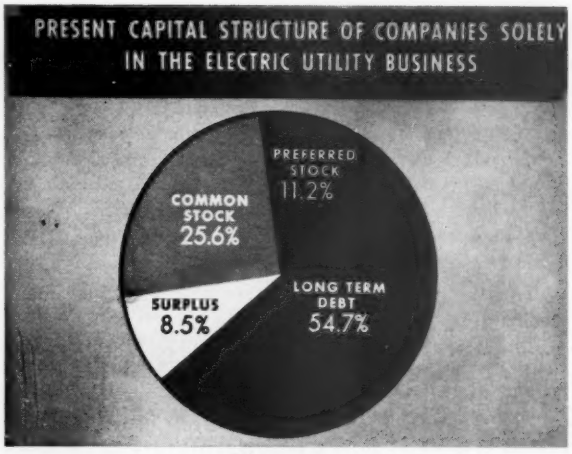


Figure 4

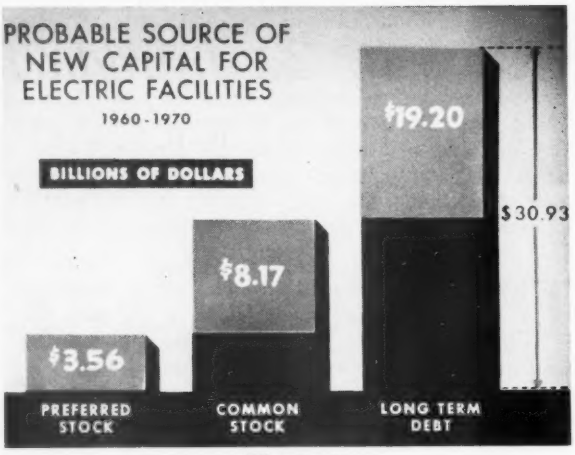


Figure 5

years than the companies accumulated in their plant accounts in the 77 years of the industry's existence.

The figure for the 10 years, 1971-1980, is $91.4 billion, and the grand total for the 21 years is $143.3 billion.

To give some idea of the magnitude of the figures that we are dealing with, the largest amount of new capital ever raised by the investor-owned electric utilities in an 11-year period in the past was $19.4 billion. That occurred during 1949-1959, which was a period involving marked inflation and when capacity was required to restore needed reserves.

This total is for electric property only. If the other businesses that some electric companies conduct were included, the grand total would be well over $150 billion.

Where will the money come from that will be required to provide the power needs for the future?

Fig. 3 shows that the $51.9 billion required for the period 1960-1970 will be provided as follows:

Retained earnings	$ 4.34	billion
Depreciation accruals	16.63	"
New capital	30.93	"
	$51.90	billion

The retained earnings and depreciation accruals are computed figures based on past experience and the new capital figure represents the difference.

These figures are based on 1959 dollars. Hence, should inflation continue, the amount of new money required would be that much greater.

The basis on which the probable sources of new capital was determined is shown in Fig. 4.

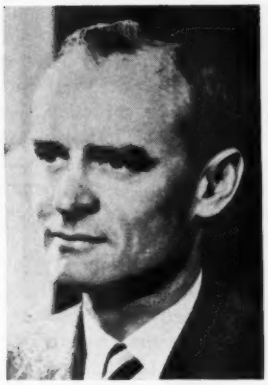
It pictures the present capital structure of the electric companies and, for purposes of our presentation, it was assumed that the capital structure of the companies in 1970 would be approximately the same.

In Fig. 5, we have attempted to show the sources of the new capital required by the companies during the period 1960-1970. The ratios used in Fig. 5 were based on the present capital structure of the companies.

If no substantial variations occur, the new capital will have to be obtained from the following sources:

Long-term debt	$19.20	billion
Preferred stock	3.56	"
Common stock	8.17	"
	$30.93	billion

The Viewpoint of the Institutional Investor for Senior Financing



G. T. Conklin, Jr.

Senior Vice President, Guardian Life Insurance Co. of America

THE magnitude of the financing task ahead of you in the decade of the Sixties is apparent. The financing job becomes all the more important when you realize that, unlike most manufacturing industries which often finance the largest part of their expansion program through internal means, your industry largely must rely on the financial markets for your necessary expansion capital.

The financial market for your debt capital consists of the large private financial intermediaries. The corporate bond market has been for some time and is today almost entirely an institutional market. Moreover, unless individual tax rates are materially lowered, or the tax-exemption privilege removed from municipal bonds, this is certain to be the case over the decade of the Sixties.

The most important institutional investors in the bond market are the life insurance companies, the corporate pension funds and the state and local funds.

The life insurance companies are, by far, the largest investors in the corporate bond market and what should be of very great significance to you is the fact that they are not purchasing electric utility bonds in any significant amount. The questions naturally arise: Why don't life insurance companies buy electric utility bonds? And who does buy them? And why? Let us take a brief look at these questions.

Life insurance investors are in all probability the broadest-gauged investors of any institutional group. They invest in every medium of which you can think, from mortgages, corporate bonds, tax-exempts, to real estate and other forms of equity.

I know of no general field of investment in which life insurance companies do not invest.

I think that most objective people would term the life insurance investors, as a group, sophisticated and seasoned investors. If one field of investment becomes unattractive relative to another, as it often does, then life insurance funds leave one field and flow into the other. This is a necessary process in a properly functioning capital market. The relative demands of the various sectors of our economy for capital are constantly changing and so is the relative attractiveness of these fields to investors.

At one time life insurance companies invested very heavily in public utility debt securities; indeed they were the most important investors in your industry.

Change of Scene

From 1937 to 1950 public utility bonds comprised the largest bond holdings of insurance companies. Then the scene changed radically to the present where we have very little interest in your debt securities. The reasons are several:

- Through bitter experience in 1953-1954, life insurance investors had forcefully brought home to them the importance of adequate protection against call for refunding purposes. After having suffered through two decades of low interest rates, investors finally, in 1953, were able to put money out at levels appreciably higher than in the previous two decades, only to have many of those investments taken away in 1954 when interest rates temporarily sharply declined. One issue was refunded even before final delivery was taken by the investors. Gradually, therefore, the industry became insistent upon adequate call protection and directed their investment to areas where they could obtain it, and away from areas, i.e., electric utilities, where it was largely unobtainable. A survey of 57 life insurance companies conducted in 1958 by the Life Insurance Association of America revealed that, in the case of 54 of the 57 companies, protection against early redemption at a lower rate of interest was a factor of major importance in investment policy.

- As the economy came into the tremendous postwar expansion with its heavy demands for capital from all private sectors, the range of investment opportunities and interest rates available to the broad-gauged investor widened greatly. Consequently, life insurance funds flowed heavily into mortgages and industrial bond direct placements where heavier demands relative to the supply of funds available pro-

duced more attractive yields and better protection against refunding.

As to the second broad question raised, if life insurance companies are not very interested in electric utility bonds with present call features and interest rates, who *is* purchasing these issues and why?

It is clear who the purchasers are. They are dominantly the state and local pension funds, supplemented to a lesser and lesser extent by corporate pension funds.

The electric utility industry has been most fortunate in that these pension funds in recent years have enjoyed exceptional growth, their annual increase in assets stepped up from 2.5 billion in 1952 to an estimated 6.1 billion for this year.

Reason Not Clear

Why these funds are purchasing electric utility bonds is not clear at first glance. Surely it is not because of seasoned investment judgment, for it is difficult to understand how a "heads-you-win, tails-I-lose" bargain can, at any time, be a sound one if you have any alternatives, and the markets today offer many such alternatives—in municipals, in direct placements, in commercial mortgages, in U. S. governments, in Canadian governments and investments of all types, in World Bank bonds, in natural gas pipelines, in purchase lease-backs, in equities, etc.

No, the reason is primarily because the state and local pension funds are so hedged in by legal restrictions that they have little or no option to enter the alternative fields available to other investors. Only recently have some of these funds been able to invest in anything except U. S. governments, and then they have been limited most frequently to Aa and Aaa corporate bonds. They are relative newcomers to investment in the private sectors of our economy and, without reflecting upon them, it is only natural to suppose that they would not be as sophisticated investors as other more seasoned investors.

In other words, your industry has been blessed by the fortuitous circumstance that as the life insurance company interest in your industry's bond obligations dwindled, there appeared upon the scene another rapidly growing institution which largely, by legal restriction, had very little option to invest in anything but electric utility bonds or governments. You have been enjoying the fruits of a "trapped" and "unsophisticated" market.

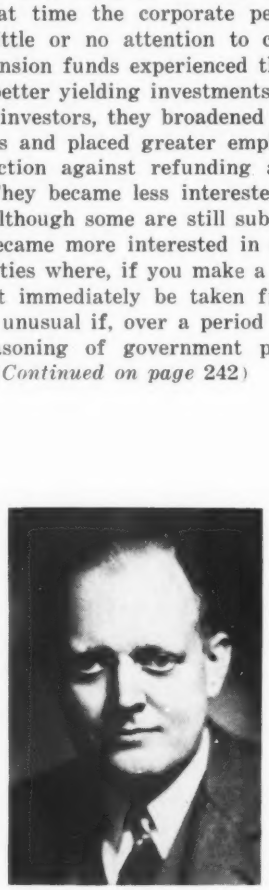
How long will you be able to enjoy these fruits?

I would not count on them lasting too long, for they are contrary to reasoned judgment which, in the long run, usually wins out. Investors are becoming more and more aware of the importance of call protection. Such awareness first came to the life insurance industry. At that time the corporate pension funds were paying little or no attention to call features. Then as the pension funds experienced the calling of some of their better yielding investments and became more seasoned investors, they broadened the scope of their operations and placed greater emphasis on the value of protection against refunding at lower interest rates. They became less interested in electric utility bonds, although some are still substantial purchasers, and became more interested in direct placements and equities where, if you make a good investment, it cannot immediately be taken from you. It would be most unusual if, over a period of time, the process of seasoning of government pension fund

(*Continued on page* 242)

The Viewpoint of the Commercial Banks

By G. M. Ives
Vice President, Morgan Guaranty Trust Co. of New York



IT is proper and fitting that the commercial banker should be high on the list to discuss this money-raising problem.

When you become short of cash you come either to us to ease your problem temporarily or to your investment banker to find a more permanent solution.

And here, I think, we have the key to what the commercial banker can and cannot do for you. He can "temporarily ease your problem"; he cannot, as a rule, do more than that.

Your situation in regard to cash is undoubtedly so familiar to you by this time that it is worth re-emphasizing that it is, by comparison, a more acute one than in other industries.

Your high rate of growth and your formidable ratio of plant account to gross revenues keep your

industry in the embarrassing position where your current assets and your current liabilities are about equal and your net working capital, therefore, zero. Manufacturing companies, by contrast, have a net working capital averaging 41 percent of their capitalization, a handsome reserve for current financial problems.

Your current reserve, however, is more than meets the eye at first glance. It lies in your ability to sell securities that are most acceptable to the investor, and it is against this ability that the commercial banker is happy to lend temporary funds.

Quality and Quantity

The size and degree of this reserve borrowing power depend, of course, on the quantity and quality of the securities you will be in a position to sell. If you have sufficient bondable additions so that you can completely retire your bank loans from sales of first mortgages, you should consider that any commercial bank would regard this as a good credit. To the extent that your additions are inadequate and you have to retire loans by sales of equity, the proverbial eyebrow commences to rise.

With the present healthy economic situation of your industry, your mortgages should be saleable at some price under any likely foreseeable conditions. So, to the extent that you have reserves of these additions, and therefore mortgages that could be sold against them (even though you may not actually plan to do so) you can consider yourselves well-buttressed with reserves, the quality of which is not too far from cash.

So, we can provide you with cash to pay your bills until such times as you choose to go to the market with your long-term securities. We can give you a flexibility in the timing of these sales; we can tide you over rough market situations; we can stand by against the hazards of delayed regulatory approval or prolonged rate cases clouding your earnings picture; and any similar factors that your financial officers must weigh before coming to market.

There are things we cannot do, however. We cannot supply you with the type of money you must eventually raise, and we cannot save you (and conversely we cannot cost you) any appreciable amount because of the difference between the cost of our money and the cost of long-term money.

Fig. 1 shows the relationship between the cost of long-term money and the cost of commercial bank money. The flat line moving in steps is the prime rate of the Morgan Guaranty Trust Co. Competitive conditions in banking being what they are, I think you can take that as the prime rate of your own bank.

The lighter line shows the average yields to the public of all double A electric bonds sold during these years. In 1948, we were still coming out of the cheap money era of the war and prewar periods. But since 1951 there has not been much difference in rates, and it will be recalled that the accord between the Federal Reserve and the Treasury was announced on March 4, 1951. There was a one-point difference in rates in

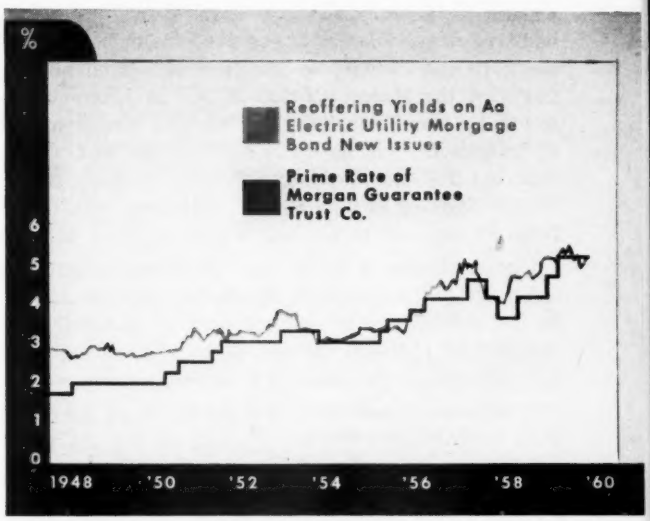


Figure 1

1948 and, for a very brief period, there was a point difference in 1957, but for the rest of the time the differences are minor.

Taking this maximum one-point saving in the prime rate compared to the bond rate, let us see if it is sufficient to justify a change in the timing of your next financing. We will assume that you borrow your full requirement for a year from banks at 1 percent less than the current cost of long-term money. The apparent saving of 1 percent must be measured against the higher cost of long-term money that will be encountered if bond interest rates have increased by the end of the year, when financing is done.

How much of an increase in long-term rates will wipe out the one year's saving? We will assume that you could sell your bonds at a 5 percent cost. How much would the market have to move against you before this 1 percent saving is wiped out? The answer in this case is 7¼ basis points. Now in substance this 1 percent saving is the present value discounted at 6 percent of 30 years of 7¼ basis points of your interest payments. But forget the mathematics for a moment and observe that a 1 percent difference in interest rate between bank and bond money for a one-year period can be offset by 7¼ basis points in the cost of your long-term money. This is 5.075 percent money instead of 5 percent, and any savings are gone.

Conversely, how about the cost of idle money, should you finance ahead of time and invest the proceeds in short-term governments until needed?

The greatest cost of idle money during the last 12-year period would have occurred during 1958, when government bill rates got as low as 1 percent. Had you been a nimble trader you might have been able to hold your cost to a couple of points difference between your money cost and the yields from these bills, which would have been the equivalent of about 15 basis points on long-term money.

We have assumed in these cases that you would borrow a given amount for a year and invest a given

amount for a year. But as a practical fact you would be borrowing gradually as you need the money during the year and likewise selling your bills gradually as you need the money, so that if this is done equally, month by month, during the year your requirements or investments will be cut in half and the cost, therefore, but 3½ and 7½ basis points. How small this is in the light of swings in the long-term rate. And these swings are large, and sometimes very abrupt.

Florida Power & Light Co., for example, brought out a $20 million issue on March 24, 1958, at a yield to the public of 4.05 percent and 19 months later repeated an identical amount of the identical bond at 5.15 percent, an increase of 110 basis points.

Even more violent have been the moves on the down side. Pacific Gas & Electric Co. sold on July 23, 1957, a $60 million issue at 4.95 percent to the public, and six months later another issue of identical bonds at 3.65 percent, a difference of 130 basis points. Or take two comparable issues and we have the 130-basis-point change in only three months' time, namely, from the $60 million issue of Consolidated Edison Co. of N. Y., Inc., on Oct. 22, 1957, at 4.95 percent to the $75 million issue of Pacific Gas & Electric Co. at 3.65 percent just one day short of three months later.

Against potential fluctuations like these in long-term rates, costs or savings of three to seven basis points look pretty small. In fact, in Fig. 1 it can be seen that the prime rate has been at its highest just before a decline in bond rates, so it can be said that bank loans have been cheapest when they cost the most.

In summary, your unfunded additions are in the nature of a cash reserve and your credit is as high as the quantity and quality of the securities you can sell to liquidate our loans. We commercial banks cannot help you sell these securities, but we can be of great help in giving you plenty of elbow room in the timing of your financing.

The Viewpoint of the Institutional Investor in Equity Securities

By F. W. Page
Vice President, Tri-Continental Corp.

INVESTORS buy common stocks for various reasons. Some invest to obtain income, some invest to obtain capital appreciation, others emphasize safety, or there can be a combination of objectives with varying weights given to these objectives. But over a period of time it is possible to detect in the market an investment philosophy that predominates.

Basic investment philosophy is very slow to change. By "basic investment philosophy" I do not mean fads such as the popularity of the uranium stocks which quickly come and go. Rather I mean the main investment theory that greatly affects the flow of a substantial segment of the country's savings. Changes in this basic philosophy are usually brought about only by some substantial shock.

During the 1920's, the basic investment philosophy was to make a quick fortune by borrowing funds and taking other undue risks. In the utility field this was reflected in highly pyramided holding companies. In the stock market it was reflected in substantial purchases of common stocks on high margins by individuals who knew little about stocks and relied largely on market tips.

This era was brought to an end by the stock market crash of 1929 and the subsequent deep and lengthy depression. Fortunes were lost and people were badly in debt. The public decided almost to the man that it would never touch the stock market again. Savings mostly went into life insurance, savings accounts, or bonds. When common stocks were bought, they were purchased almost solely on the basis of safety and yield. Retained earnings were deeply discounted because a dollar in the corporation's treasury was not worth as much as a dollar in the stockholder's hands. This philosophy prevailed throughout World War II

and was also prevalent in the early postwar period.

The shock that brought this era to an end was the outbreak of the Korean War. This event convinced the public that the United States would have to maintain a large military establishment on practically a permanent basis. This meant continued high tax rates, and with the political philosophy of full employment it meant continuing inflation.

At about this time, war bonds in large volume matured and the investing public was dramatically shown how poorly bonds treated holders in terms of purchasing power during an inflationary period.

The continuance of high tax rates detracted from the appeal of current income, and capital gains with their limited tax rate became more desirable. With inflation detracting from the appeal of bonds, and with capital gains becoming more attractive than current income, the public in increasing numbers turned to stocks as a haven for their savings. Two lessons of the 1920's were kept in mind. Buying on margin was held to a minimum, and instead of relying on tips the public sought professional advice and management.

A refinement of this basic investment philosophy crept into the picture to an important degree in 1957, and it has become more pronounced in the last two years.

The public is now seeking stocks in companies that show the fastest growth in per share earnings. With confidence in the future, they are willing to pay many times current earnings in order to obtain higher earnings in the future. It is through this growth that they hope to get their capital appreciation and eventually higher income.

Current yields are more or less ignored and a dollar of reinvested earnings is no longer considered to be worth less than a dollar in the stockholder's hands. As a matter of fact, a premium is placed on the reinvested earnings because they, undiminished by the tax bite, will earn additional dollars.

Basic investment philosophies are slow to change, and changes are normally brought about only by some substantial shock. The current philosophy can be summarized as follows.

With a continuing high tax rate and an inflationary economy, common stocks are preferable to fixed income securities. From a long-range point of view, properly selected common stocks are almost sure to show appreciation in the absence of a forced sale during a low market. A key factor in proper selection is the rate of growth in per share earnings and the faster the rate of growth, the higher will be the price-earnings ratio. Obviously this philosophy is predicated on confidence in the future of the economy. I believe this philosophy will continue to dominate the market until some shock occurs to undermine this confidence. Shock by its very definition is unpredictable, so no one can say how long the current philosophy will continue its dominant role.

How can you obtain a growth in earnings when your rate of return is restricted by regulation, and why should you be interested in a high price-earnings ratio for your stock?

Reputation of earnings growth is neither easily earned nor quickly lost in the stock market. Such reputation is based either on a long-term earnings record or on factors which lead the investor to believe that there will be future earnings growth.

As an example, reason indicated that utilities, even though they had strong growth in terms of physical units, could not have strong growth in earnings because earnings were limited by regulation. It took actual earnings results for many years to convince the market that there were utilities who had an earnings growth comparable to that of the faster growing industrials.

In determining the growth rate, the investor usually determines the rate at which earnings grew over the past five or 10 years, and then reasons whether or not there is likely to be any change in this rate. This is why a reputation of growth is not easily earned but requires your continuing efforts over a long period of years.

Your return being limited by regulation narrows your opportunities for producing earnings growth. In addition to rate of return, other "below the line" factors affecting per share results are reinvested earnings, capital structure, cost of prior capital, and the price obtained from sale of common stock relative to book value.

To show the extreme importance of this factor for an expanding utility, certain calculations can be made. In order to isolate the factor it is necessary to assume that the rate of return, the capital structure, and the cost of prior capital all remain constant and there are no reinvested earnings. Under such assumption, a utility selling new common stock at its book value would obtain no increase in per share earnings out of its expansion. However, if the common stock is sold at a substantial premium over book value, a sharp gain in earnings will result. It can be calculated that a utility with a rate of return of 6 percent, capitalized with 70 percent prior securities and 30 percent common equity, and paying 5 percent for its prior money will obtain a 30 percent gain in per share earnings under a 50 percent expansion program if the new common is sold at a premium of 150 percent over book.

Since premiums are produced mainly by high price-earnings ratios, you should continuously strive for a maximum ratio for your stock. The greatest single contributor to the price-earnings ratio is the rate of growth in per share earnings.

The rate of growth assigned to your stock by investors is based on the historical record. Both stock dividends and rights offerings tend to conceal or dilute your earnings record and so adversely affect your price-earnings ratio and the premium you obtain on the sale of common. These are the main reasons I would recommend against the use of either stock dividends or rights except under special circumstances. Although many stockholders like to receive the extra pieces of engraved paper, actually they are better off over the long run if the unnecessary dilution and expense are avoided and the higher price-earnings ratios and premiums are obtained.

The Viewpoint of the Investment Bankers

By H. H. Young
Limited Partner, Eastman Dillon Union Securities & Co.

WHAT are the views of an investment banker, the middleman, as to the outlook for permanent financing of your large capital needs in the next decade?

I wish I could say it promises to be routine and automatic. Unfortunately, I think it may require application to the task at hand, ingenuity and statesmanship. We sometimes get the impression that utility executives feel that good operating records, sound financial ratios and favorable reputations among investors will unlock the doors to the cash vaults. You must realize this is not necessarily so.

Two Primary Problems

I see two primary problems, neither of which is insurmountable. One is that many electric companies have already done so much financing that some buyers have as much of their paper as they really want. This difficulty is particularly acute as to the big companies, some of which are already paying more for their capital than their credit warrants because buyers will take additional offerings only at price concessions. One suggestion to the larger companies is that they might consider coming to the market more often for smaller bites.

A second problem is the intense competition for funds from real estate mortgages, securities of other types of corporations and tax-exempt bonds of governmental bodies. Rivalry from the latter source promises to continue particularly strong in the years ahead as explosive population increases entail the financing of public works expansions of all kinds.

Industrial enterprises offer sharp competition, especially as to the rate paid for money. Unregulated enterprises can afford to pay liberally for accommodations. Some are even offering inducements such as stock options—something the average utility is not in a position to consider, but this gives an idea of the competition. In all of this, the urge for diversification, a cardinal principle of good investing, favors enterprises and agencies whose securities do not already have a saturated market.

Speaking in detail of bonds, we find the big buyers of electric company bonds at the moment are pension funds, both state and private corporation. The phenomenal growth of the latter is one of the most interesting developments in the institutional market in recent years. It is a break for the utility companies that these funds have come into the market in a big way, as some traditional buyers have become much less avid. Life insurance companies have been putting large sums in real estate mortgages and bonds of industries other than the utility business. Private placements have had big appeal. Savings banks have had ample outlets for their money in mortgages at good rates.

With pension funds the big buyers now, it behooves the companies to tailor-make their securities to meet their wishes. If at some later date other groups are the principal buyers, study their likes and dislikes and act accordingly. Be flexible. Just because you have always offered bonds with certain provisions, don't feel you cannot deviate from the established pattern.

For instance, some funds would be more enthusiastic about 25-year bonds than the traditional 30-year issues. Certain buyers would be attracted to bonds with good sinking funds. Some institutions will take only obligations with protection against call for a specified period.

Constructive Development Noted

Passing to preferred stocks, we note a constructive development last year in the passage of new Federal tax legislation which, in its application, gives life insurance companies an inducement to buy preferred stocks. Provisions of the law are complicated and not all companies are affected the same. The net result, however, has been renewed interest in preferred stocks. Some have been sold at less than the traditional spread in yield as against the bonds of the same companies. This is a good time to give thought to sale of this type of security which has not been in vogue in recent years.

I believe that more might be done with convertible securities—notably debentures or preferred stocks. Such securities tap a sizable field of new buyers. They may not be attracted by your fixed-income securities, as such, and perhaps are unable or unwilling to buy common stocks but will be pleased to buy sound senior securities with a run for their money thrown in.

Increasing amounts for depreciation, together with retained earnings, already have eased the need for outside financing somewhat and these items promise to be increasingly helpful. A considerable amount of common stock has been sold in recent years by companies to increase their common stock equity ratios. These are now, in general, getting up to levels which seem fairly adequate and many companies who have felt under pressure in this connection should now find the pressure easing. Among the electric companies a common stock equity of 36 percent to 38 percent falls in average range. When the figure gets into the 40's, common stockholders may complain they are not getting adequate benefit from the leverage which is one of the inducements for buying utility stocks.

At the moment the best buyers of utility common stocks appear to be the pension funds, mutual funds and private investors. Life insurance companies and savings banks seem only to be nibbling. If I could tell you what the stock market trends are going to be, I would not be here offering pearls of wisdom gratuitously. I can say that utility stocks as a group do not appear exploited, although some individual ones look high. There are definite indications that some investors, shying away from over-priced industrials, are turning to sound-value utility stocks. Briefly, there seems to be at present reasonably adequate demand for your common stocks.

Bear in mind that investors are looking to common stocks increasingly to offset inflation and the big emphasis is on growth. It behooves you to keep your earnings and dividends on an upward trend. If help is needed from regulatory authorities, don't be dilatory in presenting your case.

An idea has been propounded that the payment of a stock dividend annually in addition to a cash dividend may be the best way to minimize or avoid common stock financing. Some investors in the high tax brackets welcome stock dividends. On the other hand, some buyers—especially among the trust companies—want no part of them. I think it is early to pass judgment finally on this idea but stocks of the companies pioneering the plan have not responded marketwise in a way that suggests a spontaneous reception of the idea.

I note a trend toward eliminating the use of subscription rights on the part of some of the companies with which they are optional. I recognize all the arguments in favor of a straight public offering but I just suggest that in some future market where buyers are not as easy to find, the companies which have consistently made offerings to their shareholders may find some competitive advantage.

The task ahead may not be easy, but it should be entirely possible. Keep closely in touch with the potential buyers of your securities and with their points of view. Take their wishes into consideration and vary your plans and procedures as necessary.

Neighborhood Service—Foundation of World Leadership

(*Continued from page* 174)

the country, we will have taken the long step toward maintaining our industry as an integral part of our free economy. It is my hope that our companies will continue this educational process, using the "Main Street" approach which is our strongest asset.

Some of the most important areas to which our companies should be giving attention in this educational program (Fig. 8) are as follows:

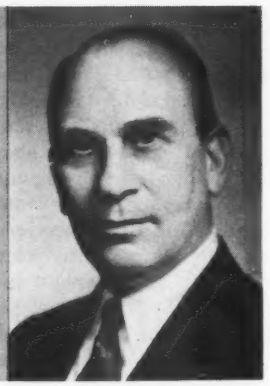
- We must tell people what we are doing and what we plan to do.
- We should use the neighborhood aspects of our business and solve our problems largely on "Main Street."
- We should attempt to eliminate the split personality we have acquired, and try to translate favorable company images into an industry image.
- We should identify our companies as free enterprising business organizations.
- We should tell people how we were founded in the free enterprise tradition, are still business enterprises, and should remain so.
- We should point to our hundreds of thousands of owners that we are not Wall Street controlled, and that certain past history is out of date.
- We should take our part in the present activity to inform people about our American economic system, and what it means to them as individuals.
- As companies we should all be engaging actively in telling this story to people—our neighbors.

As we tell this story it is well to remember that people react strongly to "What's in it for me?" Our American way of life has produced innumerable benefits for the individual Tom, Dick and Harry working on "Main Street." If we are to maintain this system that has brought our country to world leadership, it is essential that each Tom, Dick and Harry, and their wives and families, understand "what's in it for them," in our American way of life.

This free way of life will continue as long as we are able to maintain our free economic system, limit the role of government in the lives of our individual people, and maintain the electric utility industry as part of American free enterprise. Only in doing the necessary educational work will we be able to continue "leading the world in electric power—the American way."

Free Enterprise and the Future

By Donald Russell
Former President, University of South Carolina



IT is gratifying to appear before a group that, in meeting public needs with increasing success and in the true spirit of free private enterprise, without subsidy from the public purse and under all the handicaps of private business (and I do mean taxes), symbolizes in a unique way the beneficial operations of that dynamic economic ideology that has given both spirit and impetus to Western culture and progress.

Era of Challenge

Ours is, as everyone knows, an era of challenge, of challenge especially to our American way of life. What we need to realize, though, in a very real way is that the challenge to our American system is a rising, not a receding, tide. When our country came into being as a free nation, the challenge to its position and ways of living was from the decaying institution of absolute monarchy. Now the challenge is from something new, something fired by ruthless zeal, something that has within a few years swept across half the face of the earth and has engulfed over 800,000,000 people.

The conflict presented by this challenge is more than a political conflict. It is between two systems that cover the whole range of living—political, economic, social and spiritual. Ours is the system of freedom. The challenge comes from communism which blights all freedoms, religious with the others, and which, as Sir Winston Churchill has phrased it, "rots the soul." It dominates even the family relationships, requiring that they be subordinated to the authoritarian state. It represents, if one may paraphrase the poet, the closed mind, the starved eye, the empty heart and the brutal fist.

To us communism and all its ways strike fear into our hearts. We cannot praise even the professed high priorities it gives to teaching, to the professions and the sciences, because of the purpose of those professed priorities, which is not to make all men free, but to make a few men strong and dictatorial all over the world. You will note that I speak of these priorities as "professed," because we don't really know how reality jibes with profession in any part of the Soviet life.

But the crusading Communist has a significant source of strength: he believes unquestioningly in his system. He is, alas, a dedicated man—dedicated to the destruction of our system, and not only because he hates it, but because he believes in his own. He thinks he is right. That's what makes him so dangerous! He talks his system. He expounds it without ceasing. He never has known freedom, but has been taught that it is his enemy. Despite what to us are loathsome qualities of communism—effacement of the individual, materialism, glorification of the lie as a means to its ends, scorn of spiritual values—the zealous Communist clothes his system in appealing words, presenting it confidently as tomorrow's way to satisfy the needs and desires of all men.

To those of us who have known freedom, to those of us who esteem spiritual values above the material, all of this is appalling. We know communism for the frightful delusion that it is. We detest it for its complete indifference to individuality and the soul of man. We are against communism and all its evil brood. About this we are clear.

But we are not positive enough about our own convictions, about our own system of society, and about its superiority as a way of life. Certainly, we are not outspoken enough in our devotion to that system. And we will not successfully challenge communism, either among ourselves or with people in uncommitted countries, if we fail both to express and to practice our faith in our own system. That is fundamental. In short, we must be as much concerned with what we think and believe and do as we are about what we don't think and don't believe and don't do.

Most Zealous People in the World

Generally throughout the 19th century and well into the 20th, we Americans were the zealous people of the world. All Americans, whether ministers, doctors, teachers, salesmen, sailormen, tourists or whoever, were missionaries, talking up the American story and supremely confident of its future. Humorists made many jokes about aggressively friendly Amer-

An address before the Twenty-Eighth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 8, 1960.

icans abroad, and I recall a characterization of America by an amused British visitor who said he found us epitomized by two words printed on all hotel and office doors. One of these words was "push." The other was "pull."

But our fathers and grandfathers got our story across, and they did it because they believed it. They drew millions of immigrants to our shores—people who thirsted for what they knew as American. Even to those who did not come, we gave new inspiration and new faith. Americans were the prophets of a new world of freedom.

Still Patriotic

We are as patriotic today as ever. The heroic fighting of our young men in three wars of this century proves this—if proof be needed. But with some degree of national maturity there has come also some disposition to relax, to forget what has made our nation great and what has given our people greater opportunities.

In an interview not too long ago, Charles Malik, the then Foreign Minister of Lebanon and a long-time visitor to America—one of the most discerning statesmen of the free world—phrased this point bluntly and with force. Speaking to Americans he said:

> "You have in your own traditions certain invaluable beliefs about man and society and history and human nature and the nature of God—beliefs that you should not be ashamed of, that you should feel free to export and to teach others. But first you must rediscover them yourselves and believe in them profoundly. You are diffident about your own ideas, to which I referred—about man and society and history and human destiny and the forms of government and the relation of man and the economic process. My deepest fear—if you want it put bluntly to you—is that you don't know the infinite values that you have at the basis of your own civilization and you don't believe in them enough to put them strongly to the rest of the world."

Dr. F. A. Hayek, in his current memorable work, *The Constitution of Liberty*, has expressed the same idea in these words:

> "It is only since we were confronted with an altogether different system that we have discovered that we have lost any clear conception of our aims and possess no firm principles which we can hold up against the dogmatic ideology of our antagonists.
>
> "In the struggle for the moral support of the people of the world, the lack of firm beliefs puts the West at a great disadvantage. The mood of its intellectual leaders has long been characterized by disillusionment with its principles, disparagement of its achievements, and exclusive concern with the creation of 'better worlds.' This is not a mood in which we can hope to gain followers. If we are to succeed in the great struggle of ideas that is under way, we must first of all know what we believe. We must also become clear in our own minds as to what it is that we want to preserve if we are to prevent ourselves from drifting. No less is an explicit statement of our ideals necessary in our relations with other peoples. Foreign policy today is largely a question of which political philosophy is to triumph over another; and our very survival may depend on our ability to rally a sufficiently strong part of the world behind a common ideal."

Our hesitancy—generally speaking—to declare our faith in our system is most evident in the economic field. In the political area, we declare our inflexible faith in democracy and freedom. We talk sententiously about liberty. We are a religious people, committed to the religious idea of the sanctity of the individual. But we hesitate to use that word generally used to describe our economic life, "capitalism."

There have been false steps along the road of capitalism just as there have been along the road of political democracy or of religious liberty. But these temporary outcroppings must not obscure for us the inherent and transcendent virtues both of our political and our economic systems. No human creation is perfect, and that is so because we as individuals are not perfect. But we must not permit temporary faults to blind us to the over-riding virtues of our political, religious and economic virtues. Especially must we concern ourselves less with the confession of sin and far more with professions of faith and confidence in the paramount virtue of our system. We need to apologize less and to proclaim more.

As a matter of fact, capitalism and industrialization are blamed with many sins for which they are in no wise responsible. The development of urban slums in England in the early periods of industrial growth was promoted by an absurd governmental policy of imposing a heavy burden of taxes on windows.

The eminent English historian, Basil Williams, has observed that child labor in the English factories represented an almost unconscious step in the transition from home manufacturing to the factory system.

This is not to decry the evils of either slums or child labor; both should be eliminated, but capitalism was not their creator.

It must be conceded that the word "capitalism" is not an apt term. Its very formation as a word is ponderous and forbidding. It lacks emotional impact and it creates no real mental image to fire the imagination or to nourish militancy. Actually, its vogue and use is due largely to Marx and his followers; and that is natural, because Marx tends to the obscure phrase.

For that matter, capitalism, as the term is used, is as much a part of economic communism as it is of our system. Every economic enterprise must have capital; it cannot exist without capital funds and investment. The difference in the use of the term between the Communist and ourselves is one between state capitalism and private capitalism. But, unfortunately, even the phrase "private capitalism" is inadequate to express or to encompass the many human qualities reflected in our system. We must seek another phrase that may more nearly correspond with the broad meaning of the economic part of our free society. That phrase is "free private enterprise," and, more nearly than any other, it conveys the thought behind all this economic framework of our system.

A recent public opinion survey, conducted by the Opinion Research Corp. of Princeton, N. J., among employee groups, pointed up the strikingly contrasting psychological reaction to the two phrases "capitalism" and "free enterprise." It found that "capitalism" evoked "a distinctly hostile emotional response." "Free enterprise," on the other hand, provoked a favorable reaction from the same group.

We are engaged in selling something and something of infinite value to the freedom of the world and to our own future. We should not handicap our system with a descriptive word that lacks the power to attract and to proselyte. Especially is that true when the phrase that provokes the favorable reaction expresses better the philosophy of our economics. "Free enterprise" is an integral part of our society; it is the accurate expression of our economic life.

What does "free private enterprise" connote?

It means simply individual freedom expressed in the economic field. It means extending the liberty of the political area to the economic area. Stated somewhat differently but equally accurately, it may be truly said that one cannot have actual political freedom without economic freedom. The two freedoms are equally essential ingredients of a free society. Let us cease, therefore, to make some distinctions between political freedom and economic free enterprise. There can be no distinction; one is contingent upon the other. They are parts of a common tradition of individual liberty. They are cooperating architects of our culture and civilization.

We need especially to keep constantly in mind that free private enterprise is not the special possession of the so-called capitalist or entrepreneur. It serves equally the rights and promotes equally the opportunities of capital and labor, of rich and poor. Economic freedom is indivisible among all peoples and all classes. The economic freedom of the capitalist is the economic freedom of the worker.

Without free private enterprise, there cannot be free labor. Russia should be a disturbing example of what state capitalism means to the working man and his rights. The Communist worker has no right to bargain freely. He cannot organize to promote his own welfare. His employer is the state. His right of organization is limited to doing what his employer tells him to do. His is purely a "company union" and a very limited one at that. As such, he will always be subordinate to state capitalism, or socialism, whichever name you prefer. And what this means to the individual worker has been well underscored by an analysis of official Soviet figures, as made a few weeks ago by our Department of Labor. The average worker in Moscow had to work 8 percent longer in 1959 than in 1928 to buy a week's supply of seven essential foods for his family. Communism is no utopia for the working man.

Working Man's True Refuge

Accordingly, it needs to be repeated over and over again that free private enterprise is the true refuge of the working man and that, without it, labor can never be free. Also it needs to be repeated over and over again that our American system of free enterprise is today giving the worker more money, more leisure, more security, better health protection, pleasanter working conditions, and more generous retirement privileges than socialism ever dared to promise him.

Free enterprise proves its case by its fruits. It is no coincidence that the United States has the highest standard of living of any nation in the world. Ours has been described as the "affluent society" in which over-eating rather than poverty is the scourge of human life. As Prof. Galbraith, in his book, *The Affluent Society*, puts it, "More die in the United States of too much food than of too little." Truly, ours is the abundant life: abundant in material comforts; abundant in culture; and, above all, abundant in freedom. That is the inevitable product of free enterprise.

No Coincidence

And it is equally no coincidence that Western civilization with its human freedoms has flourished under free private enterprise. For one thing, that is true because, under free enterprise, production is ruled by the individual consumer, exercising his own freedom of selection, rather than by the ukase of a state bureaucracy. You and I, by our choice as the consumer, determine what will be produced profitably and what will not. No bureaucrat, however wise he may be in his own sufficiency, can make that determination. Accordingly, our society is responsive to what you and I want. We are the masters. We create our own society. Pitchfork Ben Tillman, a great character and colorful former United States senator from South Carolina, tried to give his audiences some idea of the comprehensiveness of American freedom by declaring that "every man in this country is free even to go to hell—if he wants to." We may add, parenthetically, that it would appear that many people are taking advantage of this freedom.

We cannot but be disturbed from time to time at the attempts of some of our own intellectuals to condemn this primacy of the individual consumer in our society, of our ability as free individuals to determine the direction of economic development. They distrust these free, individual judgments and would supplant them with an authoritarian or governmental determination. They feel man should have his wants and preferences determined for him by a wiser governmental bureaucracy. This tendency is reflected in the rash of criticism of what is described as the "chrome-plated automobile fins."

Such action by government would be absurd. If political officials can tinker with the design of automobiles in times of peace and plenty, they can also determine the kind of hats women are to wear, the length of their skirts, and might even forbid the cherished high and small heels that punch holes in carpets.

While conceding that the fins on an automobile serve little useful purpose, they are added simply because the purchaser, free to choose, wants them. Those fins

are valuable beyond compare because they are eloquent testimonials to the freedom of our society. From that freedom we derive the system which gives us our standard of living. Those who condemn give support to that judgment rather pathetically expressed by Mr. Justice Jackson, in a posthumously published essay, in these words: "Paradoxical as it may seem, we are in an age of rebellion against liberty."

Indeed, it is no new thing for the intellectual dilettantes to mistake statism for a better life. Robert Southey, England's poet laureate, undertaking the role of an economist, in 1829 published his *Colloquies on the Progress and Prospects of Society.* He deplored industrialization; he longed nostalgically for the pastoral life of yesterday. He saw the country hastening to destruction. He ended his essay with a plea that the government carry out what he deemed her paternal duties and protect the poor through creation of a state of affairs in which the government would manage industry. There is in this a lot of what Marx was later to write and preach. We find much of it today in the chatter about us in our own society.

Argument Exploded

Lord Macaulay, in one of his early essays, completely exploded the whole argument, and he did it splendidly. He proved statistically that free enterprise and industrialism, where they were established, had reduced the poor rate considerably and that mortality figures had markedly declined in the industrial areas. He prophesied with remarkable prescience that England would be far wealthier in 1930 than she was in 1830. Particularly did he assail the notion of governmental control of industry. Governments, he exclaimed, are not so wise that we should wish for that. Their judgment was generally worse than the freely expressed and commonly corrected opinion of the individual mass. And he concludes with this paragraph, as true today as it was when written in 1830:

> "It is not by the intermeddling of Mr. Southey's idol, the omniscient and omnipotent state, but by the prudence and energy of the people, that England has hitherto been carried forward in civilization; and it is to the same prudence and the same energy that we now look with comfort and good hope. Our rulers will best promote the improvement of the nation by strictly confining themselves to their own legitimate duties, by leaving capital to find its most lucrative course, commodities their fair price, industry and intelligence their natural reward, idleness and folly their natural punishment, by maintaining peace, by defending property, by diminishing the price of law, and by observing strict economy in every department of the state. Let the government do this; the people will assuredly do the rest."

Statism, applied in the economic field, not only undermines freedom; it weakens the whole economic structure of a nation or a people. It has been the reluctant recognition of this fact that has impelled England to turn her back so decisively on nationalization of industry. With a state railroad system that seems to creak from worse to worse and with nationalized industries generally giving a poor account of themselves, even the intellectual leaders of the Labor Party are seeking to cast from their necks the albatross of nationalization. England has tasted the poison of nationalized industries and it wants no more of them. And even the Socialists of that country know it.

The recent economic rebirth of Western Germany and Japan attests to the resiliency of free enterprise. West Germany, following vigorously a policy of free enterprise, has built Europe's most prosperous nation upon the rubble of war's destruction. Democratic, free-enterprise Japan, according to a recent report by Ambassador Douglas MacArthur, II, in the last decade has maintained an average 9 percent increase in gross national product. This, Ambassador MacArthur says, "may well have been the highest rate of growth ever maintained by any nation over so long a time." This prompts the thought: if we expended a little more effort in selling free enterprise to India and Indonesia and other countries of the same grouping and a little less in giving them dollars to fritter away, we would probably contribute far more to their economic growth.

It may be suggested that Russia, under communism, has shown that statism can meet economically the West on equal terms. In support of this, many statistics may be marshalled. It should be remembered that all the mass of figures in support of the great industrial strides of the Soviets are issued by the Russian government itself; they are self-serving and must be viewed with suspicion. Moreover, they deal with an economy at a much lower level than our own and thus one in which percentages of increase may often be most misleading, as Prof. Nutter of the University of Virginia has so convincingly demonstrated in a number of recent studies. But even the Soviet figures, if taken at full value, demonstrate that Russian production increases are in areas of government interest and direction. They fit into a pattern of statism. In the field of consumer goods, in the area of providing a higher standard of living, in yielding to the individual demands of the people themselves, Russia offers a standard of living even lower than that of several of its satellites in Eastern Europe.

If America were to eliminate the automobile fins—or, to make it more extreme, limit the automobile to the government bureaucrat—stifle our great consumer industries, dependent upon the individual consumer both in choice and demand, and were to concentrate on heavy industry, on steel and arms, we soon would be so over-run with them that wheat surpluses and cotton warehouses would be forgotten. It is the genius of our society that, save for the military requirements, you and I, as free individuals, with our own freely expressed wants, control the great productive sources of America and guarantee that they shall be directed to a higher standard of living for Americans.

Manufacturer Must Anticipate Consumer Wants

All this flows from this system of free enterprise, where the economy is controlled by the individual consumer and not by arrogant bureaucracy. It is the

product of a society which is dependent upon individual initiative and judgment. The manufacturer cannot determine either himself or from governmental direction what he should produce. He must anticipate —and anticipate at his peril—what the individual consumer in our society will want.

Self-reliance, initiative, and innovation thus become an integral part of our economic society. All of this contributes to a progressive stream of growth and expansion and of an improving standard of living. It meets that test of good government as stated by Goethe, who, after asking "what government is the best?" answered "that which teaches us to govern ourselves." They all continue to produce a climate that can never exist under statism, when the government chooses what the manufacturer can produce and limits what the consumer can buy. There the choice is the government's and not the individual's. This assumption of supreme responsibility by government over the individual and his wants atrophies individual initiative. It creates blind and supine submissiveness that is hostile to progress. It leads to that result contemplated by Thomas Jefferson when he wrote: "Were we directed from Washington when to sow and when to reap, we should soon want bread." I may add that sometimes it appears we are approaching dangerously near this condition.

Some modern economists criticize all this freedom and right of individual choice because they contend that "Madison Avenue," a term used derisively to describe our advertising art, misleads and diverts our consumer demands. Perhaps there is some merit in this. But it overlooks that this is a small price to pay for the liberty that is ours. If we are to have freedom, it must include the right occasionally to be a fool. And especially is this true when our foolishness doesn't hurt anyone else.

Walter Bagehot, the famous English editor and political thinker, put this point bluntly:

"I fear you will laugh when I tell you what I conceive to be about the most essential quality for a free

(*Continued on page* 243)

Safety— a Management Responsibility

By J. T. Wolfe
President, Baltimore Gas and Electric Co.

SAFETY is a subject close to my heart, but not closer, I am glad to observe, than it is to the hearts of those who direct the affairs of the Edison Electric Institute. The very fact that it has been included as a topic on the Convention schedule is an indication of the high degree of importance attached to it by the leaders of our industry. Usually the subject of safety is relegated to the committee room or, at best, to the sectional conference. I am impressed by the fact that this is the second time in four years it has been discussed at EEI's Annual Convention.

Thirty years ago—in 1930—312 employees of the Baltimore Gas and Electric Co. suffered disabling injuries resulting from accidents on the job. We defined a disabling injury then as we do now: any accident which results in death, or permanent disability, of whatever magnitude, or which involves the loss of eight or more consecutive hours from work. In 1959, with many more employees on the payroll, had the accident frequency rate been the same as in 1930, 460 of our employees would have suffered such injuries. Instead, the number of disabling injuries was eight.

What caused this rather phenomenal reduction in accident frequency over a period of just three decades?

The short answer is simply this: management recognized that it had a responsibility for the safety of our company's employees and decided to discharge that responsibility.

I do not wish to minimize the importance of the work done by our Safety Division in developing safety manuals; in organizing cooperative and competitive safety programs; in suggesting improved methods and better tools; in helping to determine the cause and cure for each accident immediately after its occurrence; in publicizing the importance and the requisites of safety; and in otherwise assisting, in count-

An address before the Twenty-Eighth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 8, 1960.

less ways, in the achievement of management objectives.

Indeed, one of the first acts of management, following its acceptance of the responsibility for safety, was to establish an effective safety division. I would be remiss if I did not pay tribute to the outstanding work done by my associates in this division. No company of our size can achieve its safety objectives without the persistent and intelligent aid of safety specialists.

I also do not want to overlook the significant contribution made by the Accident Prevention Committee of the Institute in conducting safety conferences; in exchanging information on methods and results; in preparing training programs and materials; in recognizing meritorious achievement; and in numerous other ways. The concern for safety expressed through the work of this committee has been a major factor in reducing accident frequency in the electric industry from 14.02 in 1949 to 6.06 disabling injuries per million man-hours in 1959.

Management Must Decide

What I am trying to say at this point is that industrial accidents will never be eliminated, nor further reduced in frequency to any substantial degree, unless and until management first decides that they shall be eliminated, and then makes its decision known —not just to the safety supervisor or safety engineer, but to the entire line organization, including all of the company's employees.

The responsibility for safety cannot be delegated to a staff department. It is part of the job of every officer, every department head, every foreman or group head, every individual worker, to prevent or avoid accidents. Unless that fact is clearly impressed upon and kept fresh in the mind of everyone, we shall never overcome the devastating waste of human and economic resources which is the end product of accidents. And it is useless to talk about improved techniques, better tools, or any of the other paraphernalia of a modern safety program.

One would have to search pretty hard to find an intelligent management which did not admit to its responsibility for safety. In this enlightened era, being *for* safety is like being *against* sin. Both stances are among the required marks of respectability.

Yet, when I look at a chart which tells me that for the year 1959 there were still 6.47 disabling injuries for every million man-hours worked in American industry, and when I see that the accident frequency rate in my own industry was not much better than the average for all industry, being 6.06 for electric utilities, I cannot help but wonder if there aren't too many managements who are giving only lip service to this particular responsibility.

There is a familiar story about a preacher who regularly lectures the faithful on the evils of nonattendance, never reaching the ones who are guilty of skipping church. Lest it be concluded that I am making a similar mistake, let me point out that, while there are many companies in the electric industry with truly outstanding records, there are even more with very poor records, indeed.

Among the 180 companies reporting their 1959 accident experience to EEI, 52 reported a frequency above the industry average. Thirty-three of these were more than 50 percent above the industry average, 17 were more than double the industry average, and five had the dubious distinction of reporting accident frequencies from five to nine times the industry average. These remarks, however, are not addressed solely to companies with accident frequencies above the industry average. Among the companies with better than average performance, there is need for plenty of improvement before the electric industry can take its place among the exemplars of industrial safety, as an industry so deeply imbued with a public conscience certainly should do.

Perhaps too many managements in our industry are trying to delegate to staff departments a responsibility which properly belongs with themselves and with the line organization.

Or perhaps the fault lies in the measure by which management establishes its safety objective. With the record of the past confronting us, it is not unnatural for management to assume that a certain number of accidents is inevitable. Let me confess, in preparing these remarks, I caught myself thinking of a phrase —"tolerable level of accident frequency."

There is no such thing as a tolerable level of accident frequency, unless it be zero. In preparing an earnings estimate or a balance sheet, the accountants may insist upon a contingency provision for the cost of injuries and damages, but management makes a mistake when it budgets a given number of accidents.

Those of you who are baseball fans know that Hank Aaron of the Milwaukee Braves led both major leagues with a batting average of .355 last year. Based upon that record, each time he goes to bat this year the odds are nearly two to one against his hitting safely. But does he budget a given number of strike-outs or pop-ups? I don't know the answer, but I dare say that the best hitter in baseball intends to hit safely every time he steps up to the plate.

Again referring to the 180 companies reporting to EEI last year, I find 17 which reported no disabling injuries and five others which reported less than one accident per million man-hours worked. Do the managements of these companies budget a given number of accidents each year? I *do* know the answer to that. And I suspect we all know it.

One Right Objective

The plain fact is that in discharging its responsibility for safety there is only one right objective for management to set, and that is the complete elimination of accidents.

True, this objective may never be attained—just as no baseball player will ever hit safely every time he goes to bat—but any lesser objective, set as a mark of achievement, will tend to breed accidents rather than prevent them.

That is not merely a rhetorical statement. It is made after much thought, even soul-searching, on my

part. It is made in the face of a rather sobering experience I suffered last year. In the first 10 months of 1959, our company had incurred only three disabling injuries. About the first of November, I agreed to appear on this program. There followed immediately a series of accidents, totaling five in the next two months. I assure you, there was no letdown in our efforts to promote safety. One could almost say that those accidents just happened. If I were inclined toward superstition, I might conclude that it is a grave mistake to talk, or agree to talk, about safety. Certainly, I have had to ask myself, again and again, does it really make sense to strive for the complete elimination of accidents? But the answer is always "yes." It is the only objective which does make sense. Once we accept the proposition that accidents — some accidents — are inevitable, the war against them is already lost.

Safety Will Pay Dividends

I have been told by some of my friends in industry that to set as a goal the complete elimination of accidents would be to impose intolerable cost burdens on their operations. I don't believe it. True, if safety becomes an obsession, to the point where no worker is permitted to do his job without the constant surveillance of another person whose sole duty it is to watch the worker to make sure he doesn't put his hand or foot in the wrong place, and if another person is assigned to keep his eye on the watcher to be sure he stays awake, the cost burden would become intolerable. And, human nature being what it is, I suspect that the number of accidents would increase. But, if safety is taught and practiced as a matter of common sense, as a way of life, even though it may require watchers on certain hazardous jobs, it will not add to the over-all burden of costs but will pay dividends instead.

It may be that too many managements use a false standard in measuring the costs of a safety program. It is a mistake to think that the economic value of an effective safety program can be measured by weighing the cost of tools and equipment, and the man-hours spent on training and supervision, against a possible reduction in the amount of insurance premiums or accident awards. I need hardly explain that there are other values, harder to measure but far more important, than the cost of insurance. Some of them, such as the avoidance of lost time by entire crews or even whole departments when accidents occur, are economic values. And some of them, such as the pain and hardship which accidents bring to individual workers and their families, are human values. The day has passed when management can afford to ignore any of these values, for the economic and the human are inseparable.

"Safe Place Is a Good Place to Work"

"A safe place to work is a good place to work" is another way of saying that safety, encouraged by management and achieved through the common sense application of sound techniques, is a vital factor in developing the kind of human relations within a company which are prerequisite to cooperativeness and to a high level of productivity.

Lest these remarks may be passed off as a sermon couched in terms too abstract to be helpful, here is a set of specific suggestions as to how a management which recognizes its responsibility for safety can effectively discharge it. I endorse these suggestions but cannot claim their authorship. They were developed by the members of EEI's Accident Prevention Committee at a meeting two years ago, at which the subject for discussion was "What I Would Like to See Top Management Do About Safety." Here is what they would like top management to do:

- Attend and participate in employee safety activities, such as meetings, inspections, award presentation ceremonies, investigations, evaluations and analyses.
- Establish and maintain an active safety policy.
- Include safety performance in evaluating individual performance.
- Support reasonable disciplinary action for failure to follow established safe practices.
- Hold every level of supervision accountable for safety.
- Provide for effective training.
- Provide an adequate, competent safety staff.
- Place the same emphasis on accident prevention as on production.
- Demonstrate that safety is an integral part of operations.
- Direct engineering and operating personnel to consult safety representatives on safety of design.
- Appoint a joint safety and operating committee to establish uniform accident prevention rules among companies.

If top management throughout the electric industry will sincerely accept its responsibility for safety and diligently follow the suggestions of our Accident Prevention Committee, I daresay the day will not be long in coming when we can point with pride to a truly commendable performance, one worthy of this great industry of ours.

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Employee Relations in Perspective

By H. S. Kaltenborn

Vice President and Assistant to President, Westinghouse Electric Corp.

EMPLOYEE relations, or, more properly, the relationship between management and employees is a subject of vital significance to us. It is a subject that is shaping the future of many companies, and that will even determine the survival of some companies. It will affect all companies and all industries—not only those represented here—and it will be decisive not only through the 1960's, but for as long as we enjoy our present methods of making and marketing and servicing.

New Look at Employee Relations

It is possible that some of you will come to the same conclusion that others in business have come to in recent years: that it is time to take on the difficult job of making a fresh analysis of your employee relations, and to use such an analysis to formulate plans for action.

It is proper and logical to look back on the past and then to look ahead to the future. This is a fairly safe procedure under the proper conditions. If we don't look too far back, the record is there, fairly plain to see. And if we look far enough ahead, there is little likelihood of anyone catching us up on a bad guess.

I want to review briefly the development of employee relations in the not-too-distant past, and to conjecture on what employee relations may be in the future. I want to illustrate my points by reporting on the steps that one company is taking to provide the environment in which good employee relations can develop and flourish. That company, "by coincidence," is Westinghouse Electric Corp.

There is good reason for beginning with the past. Someone once said, "History isn't too clear, but it's the *only* thing we've got to go on." Certainly, the subject of employee relations is not like any of the physical sciences, where a new concept or a new discovery may revise all our projections. History is the only thing we have to go on, and management decisions in this crucial area should certainly be firmly grounded on facts. Those facts can be determined only through experience, though research into past events, and through logical analysis of these events. Given such a perspective, I believe, we can see and interpret the whole flow of events in proper interrelationship.

Before 1800, the typical industrial organization was composed of an owner, a master craftsman, and a group of journeymen. It was a simple arrangement. If the customer bought a shoddy piece of merchandise, he complained to the owner. The owner complained to the master craftsman, the master craftsman berated the journeyman, and the journeyman went home and kicked his dog or beat his wife.

The introduction of the factory system brought about a great change in conditions. Working groups were larger. There was less personal relationship between owner and employee, and between employee and customer. The introduction of machinery permitted the use of women as operatives, which may or may not have been a blessing. It also brought children into the shops, which was certainly no blessing. The differences in high quality of product became relatively less important.

Not So Bad

Today's historians and economists pretty well agree that these early factory days in the United States, when viewed in the framework of their times, were never as bad as their 20th century critics have called them. They did, in fact, offer opportunity and a standard of living not previously available to the mass of people. For most of those people, they were good times because they were better than what had gone before, just as they seem like bad times today because they were worse than what followed. This, after all, fits a definition of progress. Nevertheless, the situation of the employee caught up in an industrial revolution *was* difficult; and throughout the century he attempted to improve his lot by direct action in a dozen different fields.

The workingman believed devoutly that his problems would be solved if he could get the right to vote, free of any requirement to own real property. He joined the battle, against strong opposition, for what was then known as "universal education"—for the free public school system. Sometimes he joined the so-called Christian socialist experiments, such as those at Economy, Pa., Oneida, N. Y., and New Harmony, Ind. In the middle of the century, work-

An address before the Twenty-Eighth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 8, 1960.

ingmen's cooperatives bloomed overnight, spread and then dwindled away as an economic force.

Throughout this period, American workingmen were far more radical than we are inclined to remember today. The radical Populist Party became a powerful force in politics in the 1890's. In 1905, the revolutionary IWW—the Industrial Workers of the World—claimed a million members and may have had at least 100,000. In 1912, with a far smaller electorate than today, without woman suffrage, and against a strong third party, the U. S. Socialist Party polled the largest vote it has ever received in this country—more than 900,000 votes of 15 million cast. The same ratio would give the Socialists almost 4 million votes in the presidential elections this fall, or enough, probably, to throw the balance in favor of either party.

19th Century Union Movement

Throughout the 19th century, the union movement in this country followed a changing course. The American workingman, unlike his European counterpart, looked on his union as a device to help solve his problems, rather than as a valuable institution in itself. Union membership rose and fell in a regularly repeated pattern. On the upswing of the business cycle, a union would be formed and it would flourish by concentrating its efforts on economic problems. When the downswing came, the union would divert its attention from economic matters and begin political activity. Time after time, the mass of employees refused to follow the union into politics and the union disappeared.

In 1893, however, the year after the Homestead strike, there was a change. For the first time in our industrial history, the trade union movement was able to survive a major recession with its strength and its membership substantially intact.

Against this early labor background, we must consider the first constructive steps management took to meet new industrial problems. Management was by no means indifferent to the mounting pressures evident in the rising radical vote, the civil disturbances, and the series of bitter strikes between 1870 and 1900. It was not unconcerned about bad working conditions or about an industrial accident rate that had reached terrible proportions. Beginning in the 1880's, management groped experimentally to find effective solutions to a whole set of strange problems. The fact that many of the approaches now seem naive and ill-advised should not blind us to the good will behind their efforts, or to the actual progress that was made in industrial relations in this period.

A so-called revisionist school of historians has been giving the nation a new understanding and appreciation of the accomplishments of our early industrial leaders. These industrialists were often as ruthless as their critics have charged, and they cut many legal corners in doing what they did. As Gov. Rockefeller recently observed, "My grandfather never broke any laws, but he did cause some new ones to be written."

These men, however, were just what the historian Allen Nevins has called them: "the heroes of our material growth." They built the rail lines and the factories and the cities of America. No nation in history has paid so low a price as we have for moving from an agrarian age into an industrial economy. We know that when we observe the heavy price being paid today by people who are struggling to industrialize.

There is a chapter in the life of one industrial pioneer that amusingly illustrates the problems that come with size and the difficulties that faced an employer 60 and 70 years ago in trying to do the right thing in the face of new, strange and rapidly changing employee relations problems.

George W. Westinghouse, Jr., was an enlightened and progressive employer. He established vacations with pay—a thing almost unheard of in the 1880's. He early established sickness and accident benefits, student training courses, and incentive plans of work. He recognized the basic principle of collective bargaining and he built some hundreds of low-cost homes for his employees. As early as 1871, he did something that many people predicted would wreck the company. He gave his people Saturday afternoon for a holiday.

In 1870, George Westinghouse invited his entire work force to dine with him at one of the city hotels on Thanksgiving Day. There were 15 of them, but the expense did not deter him. The dinner was in the interest of sociability and mutual understanding, and was repeated annually for some years.

When the number of employees became too large to fit into Pittsburgh's largest hotel dining room, Mr. Westinghouse put the thing on a do-it-yourself basis. He began the custom of presenting every employee, great or small, with a turkey for Thanksgiving.

This custom continued for more than 30 years. The payroll, in the meantime, swelled steadily, until the turkeys given away weighed more than a dozen tons and had to be brought to a central distributing point in big refrigerator cars. The company was spending something like $10,000 a year on turkeys, and the name of Westinghouse became a force to reckon with in the poultry world.

A Turkey Raffle—the American Way

The original generation working at the plant, moreover, had by now been joined by a second and even a third generation. On the basis of alloting one turkey per employee, one family was likely to get several turkeys, while another, perhaps larger, would get only one. One man had seven unmarried sons working with him in the shops, and to his household every November went eight fat turkeys. He handled this in the American way, and held a giant neighborhood raffle.

Mr. Westinghouse decided to call a halt to what was becoming a serious abuse and to substitute for it a system of pension benefits for retiring employees, their widows and their orphans. Turkey money amounting to $110,000 was set aside, invested and used to pay pensions ranging from $20 to $100 a month. It was one of the earliest "social security" plans in existence in industry.

This happened in an era when industrialists were creating an institution that has been called one of

man's greatest inventions—the American corporation. And during this period, management took steps which laid down a pattern and have had an effect on the course of management action ever since. Consider some of the more important new developments.

There was the rise of the scientific management movement. At first, this movement focused mainly on methods, on tools, and on organization; but because goods are still made and sold by people, the work led inevitably into employee relations.

Professional management gradually emerged to supplant family ownership. It would be difficult to overemphasize the importance of this remarkable new development.

The staff concept in American business was conceived and developed.

Companies began to use personnel departments.

There was a conspicuous growth of management interest in employee training. The first corporation schools started up in the 1890's, and the idea grew so rapidly that by 1913 there was—in true American fashion—a National Association of Corporate Schools.

There was a conspicuous growth of management interest in employee welfare activities. Lunchrooms, washrooms, recreation facilities, libraries, company outings, and similar benefits were started and spread rapidly.

Companies introduced various kinds of employee security plans. One major company—it is still in business—introduced a profit-sharing program in 1887. Within two years there were 23 such programs, and by 1910 there were 50. In those years, various pioneering companies introduced such unthinkable innovations as employee stock ownership, pensions and company group insurance.

Companies began job classification and systematic wage and salary administration. The first major work of this kind that I know of occurred in 1918 when the Canadian government classified 60,000 jobs.

Finally there was the growth of employee representation plans. I believe the earliest of these was introduced by the Colorado Fuel and Iron Co. in 1914. In the next nine years, more than a thousand of these plans sprang up.

Employee Relations Decline

The Depression of the 1930's caused a decline both in the interest in and the practice of good employee relations. As economic conditions worsened, employees and the public lost confidence in business leadership. There was a tremendous expansion in the power, influence and range of activities of government. There was, with government encouragement, a swift and unprecedented growth of the labor movement.

Employers, employees and unions looked to Washington rather than to negotiations for the solution to collective bargaining problems. The managers of many companies became so preoccupied with union relations that they lost sight of the importance of other elements of industrial relations. More and more union relations and collective bargaining were entrusted to professionals, and supervisors often lost effective contact with their employees. Because of uncertainty about charges of unfair labor practice, supervisors were frequently told not to talk about industrial relations matters.

To sum up, these were the trends in the period from 1930 to 1947:

- Employers lost initiative.
- There was increasing dependence on government rather than on management action within individual companies.
- Management placed main emphasis on union relations, at the expense of good employee relations.
- The role of supervisors was restricted.
- Staff and outside specialists took on an enlarged role.
- Management fell into an attitude of hopelessness, even of cynicism, in industrial relations matters.

Had these trends continued unchecked after the war, the consequences to the price-and-profit system under which we operate would, in my opinion, have been serious. Employers would have lost permanently the opportunity to develop constructive relationships with their employees.

Old Problems Faded Away

Fortunately we entered a new era of industrial relations—the period from the passage of the Taft-Hartley Act in 1947 to the recession of 1958. In this decade, management rediscovered and again turned its attention to good industrial relations practices. It found that many of its old problems had been solved—or, rather, had simply disappeared. It found that it was burdened with a set of entirely new and different problems.

In this period, wartime controls were lifted. The erosion of the Depression and the war was halted. Industry carried out three massive waves of capital expansion and invested unheard-of sums in "the new industry of discovery"—research and development. And management operated against the sharpest price inflation the country had ever experienced in any peacetime period of comparable length.

The symbolic significance of the Taft-Hartley Act was probably more important to management than the actual provisions of the act itself. For the first time in many years, employers sensed an opportunity once again to do something to meet their problems. In the face of new and compelling circumstances, however, management was unable to achieve the progress in industrial relations that was so urgently required. Because the results achieved fell so far short of the need and the opportunity, this was, in many ways, a frustrating decade for management.

In this period, wage increases were of unprecedented size and liberality, and annual wage increases became an almost universal pattern in major industries.

Employee "fringe benefits" expanded and broadened.

There was a conspicuous trend toward broad-based bargaining, toward pattern bargaining, and to long-term union contracts.

The wheel that turned in 1880, that turned again in 1930, and turned again in 1947, has now turned

once again. Today we are entering still another era of industrial relations. This will be an era of "industrial shakedown" in which management policy decisions will be of vital and lasting consequences to individual companies, to industries, and to the economy as a whole.

Those who predicted last winter that the economy would take off like a rocket in the early spring—and many did—have had cause to revise their estimates. Even though sales in many lines are at record or near-record highs, companies are not selling as much of this, or as many of that, as they expected to sell.

Tidal Wave of Teenagers

There is still significant unemployment, and a tidal wave of late teenagers is about to come on the labor market. There is enormous productive capacity, some of it not being used. There is fierce price competition at a time when the break-even point of many companies has been pushed higher than some people believed possible. There is sober realization today, I think, that companies *must* improve their economic performance still further; that they *must* increase industrial efficiency; that management somehow *must* keep employments costs and other costs under control. There are many tools for doing this, and management will use them all. One of them is good industrial and employee relations.

Management now has the great opportunity to use industrial relations techniques that did not exist before World War I; that were only half developed before 1930; that were forgotten in the 1930's; and that could not be fully used in the 1950's. In my judgment, management today has an opportunity, unparalleled within the past quarter century, to influence the course of industrial relations along constructive lines. How effectively management seizes this opportunity will decisively determine the general course of industrial relations for years to come.

In the industrial scene of the 1960's, favorable employee attitudes will emerge as a critical factor in management's long-term effort to maintain orderly and efficient production processes, to gain teamwork at all levels of the organization, and to insure the continued profitability of the enterprise. In the period ahead, more than ever before, it will take great foresight, ingenuity, patience and careful planning to properly build and conserve the human assets of a company. The skilled execution of such plans must now be considered as a major requirement of successful management.

Against this background of developments and analysis of events, here is how one company has approached its industrial relations problems. This company has drawn up a long-range industrial relations plan and is attempting to work effectively within the framework of that plan. The management of this company, like that of many others today, believes that long-range planning in industrial relations may be as fundamentally important to the success of the company as planning in finance or engineering, in manufacturing or sales or scientific research.

Company Objectives: The management of Westinghouse has one main objective in formulating and administering the company's industrial relations plans. Stating that objective in the simplest terms, we want our employees and members of the communities in which we operate to regard Westinghouse as "a good place to work."

We want to produce in employees the kind of attitudes and the level of morale that will prompt them to spontaneously do their best on the job. We want them to derive reasonable satisfactions from their job relationships. We want them to build up a sense of identity with the company of which they are a part. We want them to cooperate willingly in the productive effort upon which the profitable operation of the company depends.

Company Philosophy: In so doing, they will, themselves, contribute to the solidity of Westinghouse as a place of employment. They will do this both as employees and as citizens of the communities surrounding the company's operations. Employees who develop constructive attitudes play an important role in influencing public opinion locally regarding the company.

We believe that such constructive attitudes can be built and maintained through fair treatment, opportunities for progress, keeping employees informed, and making it possible for them to get prompt and fair consideration of their grievances.

We know that we are building not only products, but attitudes. We believe that good products delivered on schedule at competitive prices depend on good attitudes—that good products, competitive prices, and good attitudes go hand in hand. A failure in any one exacts a future price in the market place, or at the work place, or both.

Three Requirements

These, then, are our company objectives, and this is our company philosophy for meeting these objectives.

To achieve results, along these lines, we recognize that three things are required of us:

- Top management must take effective action.
- All members of management at all levels must know, clearly understand, and wholeheartedly support these actions as part of the day-to-day job.
- Employees throughout the company must know and understand the actions.

Management Action: Four years ago, Westinghouse management undertook to draw up a long-range, continuing program in industrial relations. Management wanted to plan where it would be five and 10 years ahead. It wanted to know what approaches and policies should be followed to get there. It wanted to know what tools and techniques were available. It wanted to base the planning on a careful, realistic appraisal of problems, needs, and opportunities—all within the total political, economic and social environment within which Westinghouse, like other companies, must operate.

To assist in this long-range planning, management called on the services of an outside consulting organization. A total of more than 900 of our management people were interviewed individually and confidentially. Interviews were held with virtually every key

officer; with the top executives in every major operating location; with the top executives in sales, engineering, and other major non-operating functions; down through all levels of the management organization and in all major functional segments. These interviews permitted us to see the company, its problems and its opportunities through the eyes of our total management organization. This then was the foundation stone on which our long-range planning initially rested.

We believe that continuing research in industrial relations is necessary, and that our planning must constantly evolve as circumstances change within the company and in the world around us. No major corporation today can afford to rely on traditional ways of "doing business as usual."

In changing and keeping the industrial relations plan current, we use all meaningful and effective ways to seek out the facts. We use opinion polls. We study grievances and grievance trends. We encourage frequent personal contact between employees and their supervisors. We urge division and product department managers to get out frequently on the shop floor where the people, the problems and the opportunities are.

"A Westinghouse Creed"

"A Westinghouse Creed": In 1957, we put into writing a broad statement of "Westinghouse philosophy," and gave it wide distribution. This statement embodies the company's aims in all its dealings with employees, and it establishes the broad principles by which management appraises its own performance and by which it is willing to be judged.

We believe such a clearly defined and understood statement of company objectives helps to achieve a degree of unified management action that is difficult to accomplish in any other way. Management thinking in executive ranks is clarified and reconciled, so that a common understanding guides the efforts of all. Lower levels of management obtain a sense of over-all directional guidance in employee relations and an assurance that everyone in the company is working toward unified goals. Such a "charter" serves as a keystone for supervisory training and management development efforts.

Our statement of philosophy is called "A Westinghouse Creed." It hangs framed in every Westinghouse office and plant throughout the United States. Here are the first four sentences:

> "We believe that the most important asset of Westinghouse is its people—in every plant, office and community, wherever they work and live. We believe in the dignity of every employee in Westinghouse and the importance of his work. We believe that the well-being and security of employees are dependent upon the soundness and security of Westinghouse; that, to keep our company sound and secure, the people of Westinghouse have an obligation to make the most effective use of their skill, effort and time on their jobs. We believe that all of the people of Westinghouse must recognize our joint responsibility to the owners of our company, to the public we service, and to our nation as a whole."

We may occasionally slip and fall below the standard established by this creed, but we will never stop trying to conduct our affairs in keeping with its spirit.

Reorganization: Another action taken by management was to recognize and affirm the fact that industrial relations is basically a line responsibility stemming from the top executive level, and that it is a responsibility which cannot be delegated to staff and then forgotten. At Westinghouse, industrial relations denotes the total activity involving management policy, practice and action directed toward establishing and maintaining an industrial environment in which the human resources of the organization are most effectively used. Thus the broad corporate staff functions of employee relations, union relations, personnel services of various kinds, publicity, stockholder and community relations, communications, training, education and welfare come under a single officer who is a member of the board of directors.

Management Responsibility: Our effort to achieve enduringly sound employee, union and community relations places on every member of Westinghouse management a two-fold responsibility—a personal responsibility for building good attitudes among those in his immediate surroundings, and a responsibility for seeing that the same responsibility is fulfilled by the management group under his supervision. It follows, then, that individual members of management are held responsible for good performance in this area and are appraised accordingly, just as they are with respect to meeting production schedules, budgets, quality standards, sales bogeys, and so forth.

In other words, building good employee attitudes is an essential part of the management job. It is, moreover, a major responsibility of *all* levels in the management organization—not alone of the personnel department, the industrial relations people, or any other specialist staff group.

It is often said that the quality of a company's performance can be measured by the length and breadth of the shadow of the men at the top. It is said that supervisors and foremen can make or break any industrial relations program. Each of these statements contains an element of truth, but, standing alone, neither is more than a half truth. For the quality of relationships with employees is dependent on the impact of the total management process, not exclusively or even primarily on the performance of isolated segments of management.

Every Link Must Contribute

If line management, as well as staff, is to discharge this responsibility, every link in the chain must contribute its full strength in influencing others so that the company objectives may be achieved. Our approach recognizes that a special and heavy responsibility in this regard rests upon members of the three key levels of the management group—the top executive echelon, the product group vice presidents, and the division and product department managers. These are responsible, within their respective spheres of influence, for directing the course of industrial

relations throughout the Westinghouse organization.

Employee Understanding: Our industrial relations policies are determined in the light of their long-term contribution to the success of the enterprise *and* the welfare of our employees. Thus one element of our philosophy gives full weight to the impact of policy decisions on employees. And those policy decisions are designed to serve the interest of employees, whether the employees deal directly with the company on matters relating to their employment, or deal with us through union representatives.

Westinghouse has established relationships with many unions. Our philosophy and approach is in no way anti-union. Rather, we accept unionism as an institution that is here to stay, and as one with which we must learn to live constructively in the mutual best interests of all concerned.

In line with this philosophy, we urge our employees who are represented by unions to participate actively in the affairs of those unions. We believe that apathy on the part of such employees—that lack of interest and participation in the affairs of their union—does not benefit either the employee or the company, but rather could harm both. The revelations of the McClellan Committee, as well as experiences within many companies, show the dangers that arise in dealing with any union leader—no matter how conservatively oriented he may be—who is not informed about and responsive to the interests and needs of the membership.

We have also come to believe more strongly than ever that the problems facing management cannot be solved by relying on group action or collective bargaining alone. Sound solutions require that the company focus its policy and approach in terms of their impact on employees, individually and collectively. Those employees may be union members but they seek their opportunities, security and welfare first of all as employees of the company.

We believe, finally, that the solution to our industrial relations problems lies within the company and not in Washington. I personally think that the political atmosphere is as favorable to business as it is likely to be for a long time to come.

I would like to emphasize once again that we believe our industrial relations organization, plans, and program must be constantly reviewed, must be improved where improvements can be made, and must be changed where changes are necessary.

I think it is clear from these remarks that we consider the people in our plants and offices the most valuable asset we have. There are 116,000 of them—every one an individual human being. There are the skilled machinists, the assembly line operatives, the young engineers just starting their careers. There are the plant foremen, the secretaries at their desks, the expert welders, the expert cranemen. There are the young men waiting for their call to the army and the pure research scientists talking in a language and thinking in terms beyond the range of most of us.

This is more than a token sentiment expressed because it is the conventional thing to say. We know the value of these good human beings from our own corporate experiences. We know it from observing the experiences of others. We have all seen what has happened in countries like West Germany since the war. With its physical plant in ruins, industry there has rebuilt, in 10 years, a magnificent new industrial base. Lacking almost everything else, those companies had trained, talented, willing workers.

American workers are good workers. They are moderate in their viewpoint, both politically and economically, and have steadfastly rejected extremists both of a too radical and a too conservative orientation. I am confident they will continue to do so.

The next 10 years will be a period of critical importance to American industry, and in these years the American worker will pay an important—perhaps a decisive—role. It will be a decade of danger and of opportunity. It will be a decade of rapid change, with dimensions we can now barely glimpse. In the words of the historian Arnold Toynbee, "We are living through a change in the scale of human affairs that is moving almost too fast for us to keep track of it."

As management men, we must be prepared to cope with this danger, this opportunity, this change. Our chances of doing this will be infinitely improved if we can achieve the quality of employee relations so urgently required.

In conclusion, almost everything we do in the area of employee relations rests upon the assumption that our people are good, sensible and sound human beings who will make the right decisions given full information and the opportunity to do so. I stated this as an assumption, but it is more than that. It is indeed an article of faith, whose validity has been proven over and over again in our industrial history.

LBE—Key to the Electrifying 60's

(*Continued from page* 182)

to capitalize locally on the opportunities set up by the national program. The LBE program is an additional promotional effort, not a substitute for the local job.

● The Live Better Electrically program was conceived and is being operated for the benefit of the entire electrical industry—not just the utilities, not just some utilities, but for all electric utilities, all manufacturers of electrical equipment and all our trade allies. It is imperative that all segments of our industry recognize that, as the industry prospers, so does each part of it. When we consider the objectives of the Live Better Electrically program, there is no such thing as a straight electric company or a combination company—we are all electric companies. In this concept, it seems right, desirable and good sense for all companies to contribute and have a voice in this family affair. We ask the full cooperation of all utilities, all manufacturers and all our allies—so we may all rightfully share in the benefits.

Good Public Relations Must Be Earned

By G. R. Conover

Vice President, Philadelphia Electric Co.

ON Wednesday morning, May 19, 1920, just 40 years ago, the National Electric Light Association opened its 43rd annual convention in Pasadena, Calif. I have reviewed the proceedings of that convention which consist of 821 printed pages of speeches, committee reports, and discussions but nowhere did I find any mention of public relations. At this meeting the interest of the public was given little or no consideration. Accounting, financing, engineering, rates, load building, generation and distribution, safety, and other operating functions were highlighted.

However, here in Atlantic City, on June 8, 1928, at the 51st annual NELA convention, 32 years ago, I found that Jack Owens, then president of the Oklahoma Gas & Electric Co., reported on the public relations section that:

> "To inform the public we are privileged to serve is a function second only in importance to serving them adequately, economically, and efficiently."

Thus, the necessity and desirability of good public relations were beginning to dawn on the industry.

"And in 1960 . . ."

Moving now quickly to 1960, this discussion could not be better introduced than was done by this year's EEI president, Allen King, in his message contained in the 1960 convention brochure.

> "It has been increasingly clear," Mr. King said, "that one of the biggest opportunities lies in our relations with people—our employees, customers, stockholders, and others in our communities, whose understanding and support are so vital to the progress of our companies and the industry as a whole."

It must be remembered that generation, distribution, and utilization facilities in the early years were new and untried, very inefficient, and unreliable; consequently, the industry was compelled to concentrate on engineering and operating problems. There were heartaches then much the same as there are today in our missile and atomic programs.

During the past 40 years virtually every phase of our business underwent numerous changes in a never-ending quest for improvement. Yet with all these advancements, one very important part of our business—the part dealing with human nature—did not change. The personal characteristics which set individuals apart, one from the other, the thing which makes impossible any standardization of human beings, is the same today as it was years ago. Some have tried schemes to regiment people or make them automatons, to have them follow set patterns of human behavior, but they have always failed. Generation after generation people have remained unchanged, opinionated free thinkers. Although science and engineering have made phenomenal progress and man is supposed to know what is on the other side of the moon, the fact still remains that he cannot tell what is in the back of his wife's mind.

If I were speaking as an engineer or scientist, perhaps we could explore in detail some of our outstanding technical advances. However, I am speaking as a public relations executive. My field is not physics or mechanics or electronics, but people. I intend to deal with what is popularly known as a "corporate image" and "public relations."

The meaning of "corporate image," like "public relations," is not too well-understood. It has come into popular use in recent years with such terms as "motivation research," "marketing concept," and similar Madison Avenue gems. "Corporate image," as used here, means the total impression made by a company on the public. It is a reflection of a company's reputation, integrity, character, and standing in the community. "Public relations" embraces all human elements of any enterprise, from the private thoughts of an individual to the collective force of public opinion. It means many things to many people. Some cynics say it covers a multitude of sins, that it is nothing more than free publicity, concealed propaganda, or a means by which something unethical or undeserved can be foisted upon an unsuspecting public.

It is not necessary for me to point out that the public relations we are talking about is none of

An address before the Twenty-Eighth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 8, 1960.

these things. Instead, it is exactly what it says—relations with the public, the art of getting along with people, the science of human behavior. It is a continuing fundamental attitude of mind, a philosophy of management which selfishly places the interests of the public first.

Where does a utility start when it sets out to earn favorable public opinion? There is only one place, and that is at the very top. Today's chief executive, who is a far cry from his early predecessor, must lead his organization and by personal example create a favorable corporate image. Some companies today enjoy fine public relations locally because the chief executive takes an important part in top-level activities of many civic, business, welfare, and financial organizations in the area the company serves. By his example he not only inspires others to do likewise, but definitely identifies the company as a good neighbor and a good citizen.

Of course, no one man can do the entire job. The chief executive sets the pattern, but his public relations policies must be implemented, preferably by an officer-executive who has company-wide cooperation, who is not restricted to departmental lines, and who reports to the chief executive direct on corporate matters. He in turn interprets the chief executive's policies and sees that proper contacts are made at appropriate departmental levels, and is responsible for carrying out those objectives.

In the interest of uniformity and consistency, an over-all public relations program can be most efficiently administered if all activities directly affecting public opinion are coordinated in one department. This would include personnel activities, stockholder relations, publicity, customer service, community activities, safety, and medical departments.

A utility deals with all segments of the public in its service area. Each of these groups is influenced and motivated by factors which differ from one another. Therefore, public relations problems arise on all of these fronts. Each may require a different approach, but all must be fitted smoothly into the immediate and long-term objectives of the company, which are designed to build and maintain a good reputation with the public and to establish the company as an institution of character that functions in the public interest.

Let us examine these broad categories of corporate activities and consider the importance of each facet. The order I will follow does not mean that I have thus ranked them in the order of their importance. As a matter of fact, all are equally important, like the supports of a three-legged stool.

Let us first concern ourselves with the customer. Customers were not created to buy from us. Our business was created to serve them. What our customers think of the way we run our company and how we do our daily job is the foundation of favorable public opinion. The electric utility business is unique in that our product is made and delivered without meeting our customers. About the only contacts we have with them are the periodic bills and the visits of our meter reader. Because normal contacts are relatively few in number, we must serve customers well on those occasions when they have personal business with us, when they telephone, or write, or otherwise contact our employees.

Another angle is the constructive handling of individual cases of customer dissatisfaction which arise from time to time. Take the case of a high bill inquiry. This should never be the subject of casual attention, but rather a golden opportunity to show interest in a customer, a time for education on the value of our service, a chance to prove we are not cold and indifferent but interested, dedicated public servants. The purpose of gaining a plus value from every telephone call, letter, or personal contact is best achieved by assigning this responsibility to a "customer service" department which should be manned by professionals who will carry out the customer relations specifications set by top management.

Second on our list is stockholder relations. What does the average stockholder know about a company? Actually, his prime interest is in two things: the market value of the stock and the amount of the dividend. The public relations job here is to keep stockholders informed on company matters such as management policies, growth possibilities, soundness of their investment, and outlook for the future. Our reports to the stockholder must play an important role.

Quarterly reports, for instance, need not be merely sheets of dry statistics. They should be interesting brochures, designed to convince investors that the company is a safe place and a good place to invest their money. They should be sent to every stockholder with the dividend check. Annual reports have the proper impact when they are interesting and well-illustrated, clearly written, easily understood, and when they echo the sound thinking of a progressive and successful company.

Good Stockholders' Meeting

Proxies constitute an excellent index of the stockholders' opinion of management. Their solicitation should be courteous; answers to stockholders' inquiries should be factual and prompt. The annual stockholders' meeting affords an opportunity for a personalized report by management. It also enables the company to tell a graphic story through a motion picture film. The measure of a good stockholders' meeting is not in the number of people gathered together, but in its orderly conduct, the cooperation of those attending the session, and the adjournment on a note of harmony and optimism toward the coming year.

Another major group is our employees. Here we must try not to lose the common touch, but rather to keep the company-employee relationship on a high plane of mutual confidence. Satisfied employees are usually ready and eager to bear witness for their employer. This is of great importance in building good public relations, for thus each employee and his family is an active good-will ambas-

sador. These contacts, in the aggregate, carry great weight in the creation of a good corporate image.

A company should offer its employees something to look forward to—steady jobs, an opportunity for promotion and salary increases, and a worthwhile pension at retirement age. The company should be known as a good place to work. Employee stock ownership is essential because employee-stockholders are more than mere job holders or wage earners. They are part owners of the business and part of the capitalistic system. As such, they take a special pride in their work, are better employees, and better representatives of the company. Therefore, employees should be given an opportunity to purchase stock of the company at a discount and pay for it on the installment plan through weekly payroll deductions.

"One of the Family"

One of the best ways to have an employee feel he is "one of the family" is to have him participate in a series of meetings at which the function of every department in the company is explained. The more an employee knows about his company, the better able he is to discuss company matters.

An important tool to keep employees informed on company activities so that they may communicate them to the public is the monthly employee magazine. This publication, well-illustrated with quality pictures, strengthens company-employee relations through articles on new company construction, methods of increasing production and operating efficiency, financial reports, added employee benefits, and other phases of company-employee relations. An employee magazine is also a morale-builder, with its reports on employee activities within the company, and in community, social, and civic affairs. Additionally, it can widen the horizon for employees, so to speak, with informative articles on subjects affecting the electric power industry and the dangers of government encroachment in this field. The magazine should be written and edited with the employees and their families in mind, and mailed to employees' homes so that the articles may be read and discussed by the entire family.

Another important public relations segment includes a variety of civic organizations, such as service clubs, church groups, worthy fund-raising bodies, and other units of community life where leadership and assistance are needed. Both the company and the employee should be identified with these community activities. This applies to the chief executive, who may head a city-wide drive, as well as to the meter reader, who may organize and conduct sand-lot sports in his neighborhood. It is a well-known fact that the individual employee is "the electric company" to many persons. His participation in community and social affairs not only increases his own stature in the eyes of others, but also strengthens the prestige of the company he represents.

A most influential group with which a utility deals is the mass communications media represented by the press, radio, and television. It is in this sphere that publicity is vitally important, for this is the medium through which company news is disseminated to the public. It is the responsibility of those engaged in publicity to channel the news most effectively to the public through newspapers, radio and television stations, trade publications, and other outlets. The publicity department must recognize newsworthy events, have a thorough knowledge of company policies, and be able to evaluate public reactions.

The work of the publicity department should also include the developing and placing of both national and local institutional advertising. This advertising serves several purposes. It assists in area development, thus helping the entire community to grow and prosper, and it also indicates to the public that the company is an aggressive outfit and a good neighbor. Another important advantage of institutional advertising is the opportunity it affords to clarify the corporate image by driving home the fact that the company is an investor-owned, taxpaying public utility.

From my comments about publicity, it is obvious that public relations and publicity are not the same thing. Public relations is the over-all instrument dealing primarily with matters of policy, with creating and carrying out policies which result in public good will. Publicity is a procedure for acquainting the public with these policies; it is only one phase of the entire field of public relations.

The company can also communicate effectively with the public through a speakers' bureau. Many clubs and organizations are on the lookout for speakers to address weekly meetings and luncheons. Here is an invitation to get across your story in a most personal manner.

There are many other activities, too numerous to outline here, that can be employed to create good public relations. I have touched only the high spots, but have tried to outline what I believe to be the foundation of a good public relations program for an electric power utility. Let me quickly recap what I have described.

First, a company's corporate image is a reflection of the chief executive—the man himself and his policies. Next, all public relations activities should be implemented by an officer-executive reporting directly to the chief executive.

With the program designated as a separate administrative function, the supervision of *all* activities directly affecting public opinion should be consolidated in one department. This includes all personnel activities, publicity, community relations, institutional advertising, customer relations, safety, and medical services.

The success of a public relations program does not depend on what *you* think of the public, but rather on what the *public thinks of you.* In other words, your policies and practices must be developed with the best interests of the public in mind.

In conclusion, let me say that favorable public opinion must be deserved, and good public relations must be earned. Words have significance only when they are backed by deeds.

Electric Heat: the Big Market of the Sixties

(*Continued from page* 187)

device that could come on our lines anytime mama wanted to sharpen the crease on papa's pants. And Tuesday, when the bright pennants of clothes lines became loose mounds of fresh, but wrinkled, clothes, would be a day of burned-out services, transformers, and secondaries.

Is this picture overdrawn? Or have we too often hesitated before our opportunities? Did we balk at the idea of tarnishing our power factor and sacrificing the good name of our voltage with motors for washers, cleaners, refrigerators, air conditioners? We need more schooling in our companies on tolerance: tolerance of loads, big, little, and medium—loads that strain our ingenuity as well as heat our copper—loads that make us fret about peaks, capacity, and reserve.

We want our rate people to be equally tolerant, equally understanding of these loads and opportunities. As much as we urge them, our manufacturing friends cannot provide all the answers. Many of us in the utility industry have an electric heat pricing problem, a problem made more difficult by rate traditions.

The all-electric home provides a test of our willingness to price our product in a way to continue the expanding use of electricity which has marked our history, and to meet our competitive needs. We should approach the problem with a fresh viewpoint. It is important to keep in mind, too, that the all-electric home has a much higher general service use. A recent study by the TVA showed it to be nearly double that of an ordinary residence. This additional use is an important bonus to take into account when pricing electric heat.

Companies with summer peaks may find that little or no generating capacity costs need be assigned to the space heating demand. A first step in the pricing process may well be an incremental cost evaluation. But I leave the debate on incremental costs, promotional pricing, and cost of service studies to the technicians. It is sufficient for us to expect that whatever the theory, whatever the technique, whatever the underlying philosophy, out rates of charge will promote and not retard electric heat. We now have a sales opportunity greater than all of today's appliances rolled into one. What we must decide is whether we can face up to the pricing problem on a basis that will yield a constantly widening horizon of opportunity for electric consumption.

Our sales people appreciate the opportunities which lie ahead. They know first hand the challenges and the competition. They know about the gas industry, up on its toes and slugging for the business with a $30 million combined local and national promotional budget. They know that air conditioning, automatic cooking, and refrigeration no longer come on a silver platter tied up in blue ribbons. They recognize, too, the pressure for the consumer dollar. They know that even with promotional pricing, electric heating is going to cost more.

But our sales people also know that the American public pays for what it wants. Examples are everywhere. Fred Borch told our spring EEI sales conference: "Last year the swimming pool business, at $700 million in sales, was as big as the electric range and vacuum cleaner businesses combined. This year it is expected to reach $1 billion." Look at the improvements in cars the people pay for so cheerfully. I refer to automatic transmission, power features, and free wheeling. The annual depreciation alone would pay for heating a couple of homes electrically.

"Wake Up and Get Up"

I believe to promote successfully in this kind of competitive market, utilities really have to wake up and get up. What, specifically, is their role in promoting electric heat? The format has been pretty well defined by the many companies who are already making headway. They have learned that you need to organize the market, educate the trade, advertise to gain acceptance, sell in whatever manner the product requires, and make sure the customer is satisfied.

Just what is meant by organizing the market? The electric heat market is composed of many elements, each with varying degrees of interest. These include not only the manufacturer, distributor, architect, heating contractor, electrician, and builder, but also the mortgage lender, appraiser, and FHA officer. All need to be organized into a unified effort if electric heating is to be successfully promoted. There is no set formula to get these various factors pulling together. Your organization can do more in its own back yard than any packaged, sure-fire scheme I might describe. The job, stated simply, is one of basic leadership.

Leadership implies knowledge, which brings us to the second important function of the utility—to educate the trade. But before we educate others we must first educate ourselves. *House and Home* magazine has made a substantial contribution to the electric heating business. As Arthur Goldman, its director of marketing, recently said: "When you start promoting total electric living, you are pitching for the whole house and you have to become a total house expert. . . ."

Telling your story is not, in my opinion, simple. You tell it to the entire market, then separately to each part of the market, then you start all over again. For instance, in my own company, we ran a six-week

course on electric heating fundamentals for 700 electrical contractors. Later, we repeated it for 300 more.

Keep in mind, the lender buys the home before the owner does. So we held dinners for several hundred bankers and mortgage loan officials, and we expect to hold more. In addition, we have a program of personal and mail follow-up with these people. We didn't neglect the Society of Residential Appraisers, either —remember, they are the eyes of the lender. We talked to the Society of Architects and, of course, we lose no opportunity to contact them individually. We talked to the motel association, the apartment builders association, a half dozen real estate boards, and even a lumber dealers' group.

The third part of the utility's marketing program is to advertise electric heat to gain customer acceptance. Here you start with a decided advantage. Customers in your service area have confidence in what you say. If *you* are solidly behind a product, *they* are sure it will be a good one. In other words, as they say in the advertising trade, you have an image of truth and reliability.

With this kind of friendly atmosphere, what you principally need is to spend sufficient dollars to get your story across to the consumer. It might be well to have your programs tie in with manufacturing and trade advertising, or form a basis on which trade advertising can build. However it's done, the utility has a prime responsibility for creating consumer acceptance and action at the local level.

Another Responsibility

A fourth utility responsibility in developing the electric heat market is to sell and sell *hard*. This means an aggressive field force to work with customers, architects, builders, and contractors. Such a force must be thoroughly schooled in all phases of building. They are not selling an impulse item. It is a quality product and as such must be sold on the basis of advantages it offers. And they need to be equipped with good promotional tools to close the sale.

Finally, at least during the formative stage, I believe that it is up to the utility to see to it that the elecric heat customer is satisfied. We don't make the equipment; we don't install it. But as surely as we promote electric heat, our reputation, and to a considerable extent our public relations, are on the line with its performance. Obviously, we can't underwrite the entire business, but there are a number of things we can do. What you do to keep the customer satisfied will vary greatly with local conditions. What is important is that we put our finger on the problems and do something about them.

Other Applications Promising

Most of what I have discussed has been directed to the residential side of the electric heat market. Applications in commercial, industrial, and institutional buildings are equally promising and diversified. The development of this market is similar to the residential, with perhaps a little more staff needed to advise architects and consulting engineers on technical problems. When you consider the dimensions of the electric heat market for both manufacturer and utility, it is easy to understand why many students of marketing call it one of the greatest opportunities ever to confront our industry.

I have made some suggestions to manufacturers regarding design, performance, marketing, and promotion. Essentially, I suggested that they be modern in the way they handle this modern product. I have made some suggestions to utilities about pricing and promotion, about organizing the market, educating the trade, advertising the electric heat story, selling at whatever level in the market needs selling, and above all, keeping the customer happy. Essentially, these suggestions are simply applications of modern marketing methods to a modern product. If we do these things, and by "we" I mean manufacturers as well as utilities, electric heat will be the "Big Market of the Sixties."

New Kitchen-Planning Slide Presentation Available From EEI

A NEW kitchen-planning slide presentation is now available from EEI. The package, "Mrs. Tilley and Her Lemon Pie Kitchen," is a dynamic slide discussion in color which convincingly tells the kitchen planning story.

In addition to kitchen planning, this educational kit also covers HOUSEPOWER, and discusses correct and dramatic kitchen lighting.

The kit, besides being a valuable teaching aid for home economics classes, is designed for showing to a variety of audiences: builders and building contractors, women's groups, clubs, dealers and distributors, adult education classes, architects, etc.

The Kitchen Planning Package contains 51 glass-mounted, 2″ x 2″ slides in color, a script in an attractive binder, and a teacher's guide. The price for the kit is $35.00 to EEI members; $40.00 to non-members. Inquiries should be sent to Sales Division Edison Electric Institute, 750 Third Avenue, New York 17, New York.

R. H. Fite, left, President of Florida Power & Light Co., receives the Reddy Kilowatt Annual Report Award from Ashton B. Collins, President of Reddy Kilowatt, Inc.

Florida Power & Light Wins Reddy Kilowatt Annual Report Award

SPECIAL awards were presented at the EEI Convention by Reddy Kilowatt, Inc., to 22 electric utility companies in recognition of the excellence of their annual reports. The top award, for general overall excellence, was won by Florida Power & Light Co.

Ashton B. Collins, President of Reddy Kilowatt, Inc., said the awards are made to encourage utility companies to "simplify, dramatize and humanize their annual reports in order to create greater stockholder interest and understanding of the companies' operations."

First awards in specific classes depending on size and type of company went to Philadelphia Electric Co. (Class A—400,000 or more customers); Northern Indiana Public Service Co. (Class B—200,000 to 400,000 customers); Arizona Public Service Co. (Class C—100,000 to 200,000 customers); Iowa Southern Utilities Co. (Class D—100,000 customers or less); American Electric Power Co. Inc. (holding companies); Nova Scotia Light and Power Co., Ltd. (companies outside the U. S.)

Honorable mentions went to Consumers Power Co.; Pennsylvania Power & Light Co.; Central Power and Light Co.; The Dayton Power and Light Co.; San Diego Gas & Electric Co.; Kansas Gas and Electric Co.; Southwestern Public Service Co.; Tampa Electric Co.; Otter Tail Power Co.; Southern Indiana Gas and Electric Co.; Southern Nevada Power Co.; Central and Southwest Corp.; The Southern Co.; C. A. La Electricidad De Caracas, Caracas, Venezuela; The Shawinigan Water and Power Co., Montreal, Canada.

The winning companies were among a record num-

ber of entries in this year's competition for the Reddy Kilowatt Annual Report Awards.

Judges in the contest were J. C. Bevis, President, Opinion Research Corp.; J. F. Childs, Vice President, Irving Trust Co.; F. W. Page, President, Tri-Continental Financial Corp.; and W. W. Shew, Publisher, *Electrical World* magazine. This was the 21st annual presentations of the Reddy Kilowatt Awards.

Representing winning companies in the Reddy Kilowatt Annual Report contest, front row, from left, are: R. M. Schahfer, Northern Indiana Public Service Co.; D. C. Cook, American Electric Power Co., Inc.; Walter Lucking, Arizona Public Service Co.; R. H. Fite, Florida Power & Light Co., George Conover, Philadelphia Electric Co.; Jack Fallon, Iowa Southern Utilities Co., and Douglas Anderson, Nova Scotia Light & Power Co., Ltd. Representing honorable mention winners, in the second row, from left, are: A. V. Hartl, Otter Tail Power Co.; E. L. Palmer, Pennsylvania Power & Light Co.; Fischer Black, Tampa Electric Co.; J. A. Elgaard, Kansas Gas & Electric Co.; E. S. Joslin, Central Power & Light Co.; Gail Belden, Central & South West Corp.; Reid Gardner, Southern Nevada Power Co.; George Woehler, Southern Indiana Gas & Electric Co.; D. S. Loden, Southwestern Public Service Co.; Cy Wright, Otter Tail Power Co.; L. H. Jaeger, The Southern Co.; Emery Sherwin, San Diego Gas & Electric Co.; H. S. Richmond, Consumers Power Co.; James Stuart, The Dayton Power & Light Co.

Martin of Alabama Power Honored by the Institute

(*Continued from page* 202)

United States, and in many other nations of the earth, and

"WHEREAS, he conceived and brought to fruition the Southern Research Institute, primarily for industrial research to serve the needs, conditions, and opportunities of the South, but providing as well significant aid to cancer research, and

"WHEREAS, he is a man of wide interests and accomplishments who has labored continuously and effectively for development of the natural resources of Alabama; who has given material assistance and strong personal devotion to the educational institutions of his state, and who has participated actively with many individuals and groups in advancing the well-being of the South;

"NOW THEREFORE, in recognition of the extraordinary value of his services over a long period of years,

"BE IT RESOLVED by the Board of Directors of the Edison Electric Institute that their esteemed friend and colleague, Thomas W. Martin, be cited and commended for his outstanding contributions to the electric power industry and to the industrial civic, cultural and human welfare of his native state of Alabama, of the South and of the nation."

A native of Scottsboro, Ala., Mr. Martin was an attorney in Montgomery when he first began his association with Alabama Power in 1911. He shortly became general counsel of the company, then after several years was elected vice president. In 1920, he was elected president and in the fall of 1949 he was named Chairman of the Board.

Mr. Martin said:

"The citation of Edison Electric Institute comes as a very happy surprise to me. I am humble when I think of many others who have made greater contributions than mine to the electric industry.

"This citation is a recognition, through me, of one of the nation's privately owned electric companies. It was in an ideal of private enterprise that the company launched the program in the early part of the century. That ideal represents in the highest sense the American system. Whatever has been achieved results from the joint "public" utility concept of service at all levels, local, state, and national. These men and women share with me the satisfactions of this very unusual citation. I accept it with the deep appreciation of all of us, including the directors and stockholders of the company."

The Viewpoint of the Institutional Investor for Senior Financing

(*Continued from page* 216)

investors does not have similar results. One more wave of refunding which would deprive investors of the higher yields of recent years would season many investors overnight.

While the life insurance companies have shied away from electric utility bonds, they have been becoming more interested in public utility preferred stocks as a result of the passage of the new life insurance tax law. Under this law, the 85 percent intercorporate dividend tax credit makes the after-tax yield on preferred stocks more attractive. A striking example of this increased interest in preferreds was the recent $60 million preferred stock financing of Consolidated Edison Co. of N. Y., Inc., of which the life insurance companies took $46,500,000. It is interesting to note that this issue has notably better protection against refunding than the average electric issue.

Financing Assured

Despite the admitted magnitude of financing facing your industry in the Sixties, and despite the keen competition which this financing will meet from other demanders of capital funds, there is one thing that can be stated with assurance—your industry will be able to finance its needs in the period ahead, and without excessive difficulty, for undoubtedly it will remain the highest quality investment medium in the Sixties as it has been in the Fifties.

A Question of Terms and Rates

The only question will be on what terms and at what rates. In an environment of economic growth and prosperity such as your figures for capital demands imply, it is my feeling that as your requirements become greater, and as the "trapped" and "unsophisticated" market which your industry now enjoys for your bonds becomes less "trapped" and more seasoned, the interest rates on electric utility bonds relative to other fields of investment will rise, and more protection against refunding will be accorded investors in electric utility bonds. These developments will make the electric utility bond market a more integral part of the entire bond market, rather than a rather isolated compartment in that market, and this will bring back the interest of other investors who now find greener fields elsewhere.

Book Review

'Basic Economics,' by L. C. Michelon, Suited for Company Libraries

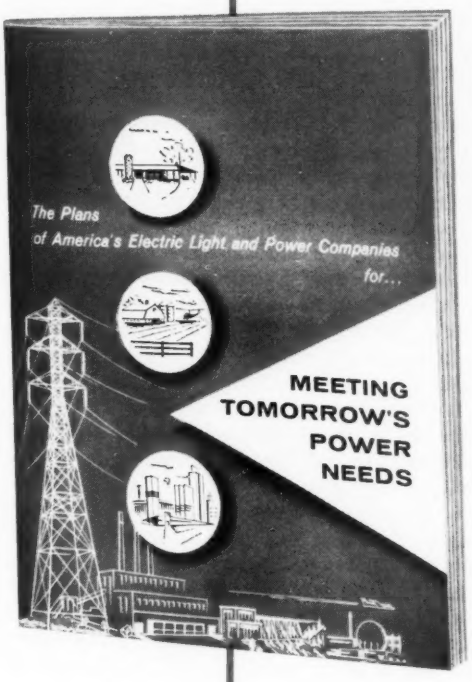
"BASIC ECONOMICS," written by L. C. Michelon in collaboration with Richard T. Thornbury and Associates of the Industrial Relations Center, The University of Chicago, was designed as a textbook for a project in economic education in secondary schools and in industry, launched at The University of Chicago.

As the title implies, *Basic Economics* treats of the elementary principles of economics in a way that can be easily understood by beginning students, the layman, or the casual reader of this complex subject. The use of graphs, charts and pictorial demonstrations aids the non-technical reader in grasping the interrelations that so frequently are shrouded in mathematical formulae and unfamiliar terms in more scientific treatments of the subject. The more sophisticated student of economics would probably find this book lacking; however, for those seeking an introduction as to how the American economy works, there is little lost through simplification.

It is a book that should perhaps be in everyone's library along with the dictionary, the encyclopedia, "Home Medicine," and the "how-to-fix-its." It is certainly a book that should be in all secondary school libraries and all company libraries. It is also a book that perhaps beginning students of economics should read before getting embroiled with Keynes. It is good classical economics.

For those companies giving employee courses in The American Economic System, *Basic Economics* would make excellent supplementary reading.—*John Thornborrow, EEI Director of Economics and Statistics.*

The Plans of America's Electric Light and Power Companies for...



Meeting Tomorrow's Power Needs

This 28-page, illustrated booklet is the result of a continuing study by the EEI Electric Power Survey Committee, and an exhaustive study covering the entire nation by a task force of electric power experts from electric utility companies.

Price: 2-9 copies, 45 cents each, pp in the U.S.; 10-99 copies, 35 cents each, pp in the U.S.; 100-999 copies, 30 cents each, shipped collect; 1000 or more copies, 20 cents each, shipped collect.

Edison Electric Institute

750 Third Ave. New York 17, N. Y.

Free Enterprise and the Future

(*Continued from page* 226)

people, whose liberty is to be progressive, permanent and on a large scale: it is much stupidity. I need not say that, in real sound stupidity, the English are unrivalled. In fact, what we opprobriously call stupidity, is nature's favorite resource for preserving steadiness of conduct and consistency of opinion." This opinion has been cited with approval by Dr. Jacques Barzun in his current best-seller, *The House of Intellect.*

A recent story—one of which I am sure, though I cannot vouchsafe it—illustrates the corrosive and degenerative effect of the failure of the individual to act on his own initiative—even if he acts stupidly on occasions. An aged refugee sought asylum from communism amongst us. After a few years he asked to be sent back. His reason was unusual. He had been so habituated to the state making all choices for him that he could not adjust to a free society where he had not only the right but also the responsibility to make choices.

No society can be truly great where its people do not have both the privilege and the responsibility of freedom, political and economic. From that common freedom will be woven the strength of a people. And only free private enterprise offers the opportunity for such freedom. Let us proclaim free enterprise as a basic part of our heritage and our faith, and let's be enthusiastic about it.

The Rural Electrification Balance Sheet

(*Continued from page* 176)

and money each of us spends during the formative years of our children. We contribute in every way possible to make them healthy, well-educated future citizens. We provide the necessary food and clothing during those years when they are unable to obtain these for themselves. However, at their coming of age we, as parents, fully expect them to be on their own, to support themselves, and to contribute of themselves in their relationships with their fellow human beings.

Time for a Change

Rural electrification is now 97 percent complete. It has come of age. Shouldn't the REA co-ops now take on their own responsibilities of full citizenship? Need they any longer rely on the parent in Washington to insure the future? It is true that certain individual co-ops may need further help before they establish themselves as full-fledged partners in the free enterprise system. Some are coming of age at different times and may have problems which they have not been able to solve as fast as others. But it is time for the vast majority to assume full citizenship.

Yet, in some areas just the opposite is happening. We find certain co-ops banding together in either statewide or super co-op organizations to promote large generation and transmission projects. Others are expanding to serve industry, commerce and communities served by efficient, well-managed, tax-paying utilities. Some co-ops are no longer content to serve the rural electrification purpose for which they were originally intended. Now they also want to reap the harvest of profits in commercial, industrial and residential loads—on top of the subsidies contributed by the Federal government—in their ever-increasing efforts to get something for nothing.

Can mutual trust and cooperative utility operation be brought about when REA spokesmen urge that the Federal government has a responsibility to guarantee their power supply at a subsidized price without raising rates, irrespective of the cost to the taxpayers? Can we have mutual trust when they feel that all power generated at Federal dams, which are financed by the taxpayers, belongs to them and that the Federal government should build the transmission lines to their load centers? Can we have mutual trust when they urge that after Federal hydro power is no longer available the Federal government should build steam plants to serve them?

These attitudes indicate they want all the benefits of an expanding economy without any of the headaches of inflation. All of these are examples of the negative attitude displayed by the leadership in the REA's and are not examples of how America has been built.

It is time for the REA leadership to turn from a negative program which builds weakness rather than strength.

It is time that these people forget what they can take away from America and start thinking of what they can contribute to its economy.

It is time for them to realize that their efforts are undermining the basic forces which have produced the dynamic growth of this nation.

To bring about a solution to this problem we need the highest caliber of leadership from both sides, with the goal in mind by all concerned that the answer should be in the best interest of all people. We of the electric companies have to understand the REA problems, and we have to start taking those constructive steps which will aid in solving these problems. Our nation's business system is predicated on the basis of fair-minded individuals sitting down with one another to discuss problems. I am confident that the old, time-honored method of working out differences can be applied to this problem for the mutual benefit of all. This should be done on the local level where men who know and respect one another as efficient, honorable businessmen can get together.

We can start on a two-way street of cooperative effort in relation to power supply, facilities planning, and common operational problems.

For example, more and more investor-owned utilities are integrating their power facilities across the nation for reasons of economy as well as in the public interest. Our customers need not look to super TVA's or to the giant Federal power agency proposed by the NRECA as the means to gain resource and operational benefits by integrating the nation's power facilities. This job can and will be done by individual investor-owned utilities working together. Such cooperation among electric companies has led us to significant technological improvements in all phases of our industry.

What of REA Co-ops?

As the integration of facilities continues at an ever-increasing rate, and as we make greater technological strides, can or should we ignore the REA co-ops? Should we isolate them from our forward planning and shunt them aside to fend for themselves?

No, if the best overall public interest is to be served we must invite and urge the co-ops to benefit from and contribute to the planning of the nation's electric industry. To achieve this goal requires the assumption of responsibility and leadership by the management of private companies and co-ops alike. Together we can find the avenue that will lead us to the solution of technical and operational problems.

Working together, we also must find the way to show farm customers how to take even fuller advantage of electrical energy, if this is the most economical form of energy available to them. One of the most important contributions in this respect has come through the inter-industry Electric Utilization Council. Through the Council electric companies and co-ops have achieved worthwhile results in many areas.

Coming together on mutual problems such as these

can be a major starting point for bringing the co-ops into the free enterprise system. We in the electric companies should remember that most of the individual members of the co-op movement are free enterprise citizens who joined the co-ops in order to gain much needed assistance in the formative years of rural electrification. Yet, while we find the job of rural electrification essentially complete, a major difference in philosophy exists between the two parties doing this work.

To Balance the Scales

Which way the scales will tend to balance in the future with regard to the philosophies will depend upon our individual efforts to work with individual co-ops on their problems. It will depend on our efforts to help them realize they have grown up and should now take full responsibility for participation in the community, state and nation. The rural electrification balance sheet can and will have a profound effect on our nation's balance sheet.

If one of the founding fathers of this country were to have the opportunity to add up our nation's assets and liabilities, I think he might be disappointed at what he found.

Those men of 200 years ago saw this nation as a union of free people, gathered together and working together for one common goal, the betterment of all the people—in a free society.

We have permitted what I consider some alien thinking to creep into our society—which puts us in danger of losing sight of that goal. We have permitted ourselves to become more concerned with separate segments and classes within our society. We have become more concerned with the material values, and no longer put our major emphasis on the values and balances which form the bedrock of our country. We have slipped away from those concepts which promote the best interests of all.

We need to revive in this country today some of the courage and wisdom that our forefathers possessed. We have to be big enough to solve our own problems and to work out solutions that will be for the common good.

We have the responsibility of helping remove some of the liabilities that are on our country's balance sheet.

A Good Place to Start

I can think of no better place for us to start than in our relations with the REA's, and in bringing about equality between ourselves and REA's—both in rights and in responsibilities.

This we must do if the electric industry—the investor-owned utilities and the REA's—is to fulfill effectively its obligations in providing for the future development of the country.

Town Served by Connecticut L & P Wins 'Reader's Digest' Service Award

TOWN officials of Rockville, Conn. were honored at Atlantic City during the EEI Convention for its street lighting campaign to make the community the nation's "safest after dark."

The police chief and mayor of Rockville received the *Reader's Digest* service award and a $500 check for the community in recognition of its street lighting program.

Among the guests of honor at the award luncheon was newly elected EEI President Sherman R. Knapp, President of The Connecticut Light & Power Co., which serves Rockville.

An article, "To Make Streets Safe After Dark," in the June issue of *Reader's Digest*, pointed out that 73 percent of the nation's murders, assaults, rapes and muggings are committed after dark. The magazine credits Rockville with setting an example for the remainder of the nation in improving the town's street illumination and the safety of its citizens after dark.

The town's mayor, Leo Flaherty, praised the Rockville street lighting program as one which has "given us new civic pride, raised our property values, increased our business potential, and provided us with a new feeling of well-being, protection and security."

"Street lighting is more profitable to us from a public relations standpoint than from a strict net revenue basis," A. M. Wade, Sales Vice President of Connecticut Light & Power, which worked with Rockville in developing its program, told the luncheon. "To us it is a builder of good public relations . . . it prevents crime and accidents. It increases business and civic pride and it makes communities more attractive places in which to live."

The General Federation of Women's Clubs in Cleveland, the City of Chicago, The Detroit Edison Co. and the City of Detroit received similar awards from the *Reader's Digest* recently.

Prime Movers Committee Meeting

- *Report on Air Pollution*
- *Power Station Personnel Subcommittee*
- *Report on Research Projects*

T. O. THOMPSON
Chairman

A MILESTONE in EEI Engineering Committee history was reached May 2-4 when the Prime Movers Committee held its 100th meeting in New Orleans, La.

Singularly, the significant occasion occurred during the year marking the Golden Anniversary of the parent Prime Movers group, organized in 1910 under the National Electric Light Association. With the Institute succeeding the NELA in the early 1930's, 27 charter members of the present committee convened for their first meeting on June 5, 1933, in Chicago. Pursuant to the scope set forth at that session "to make a continuous technical study of the economics of power generation" the committee has averaged almost four meetings per year during the intervening 27 years, while its membership has grown to 100 power station design and operating engineers, representing 78 companies.

The New Orleans meeting was held in the Hotel Monteleone. Following the committee's usual practice, sessions of the first and third days were devoted largely to round table discussion. On the morning of the second day, subcommittee, task force and special project assignment reports were presented and consideration directed to proposed research, other technical activities in which the committee has an interest, and business matters.

L. J. Cucullu, Vice President, Engineering, New Orleans Public Service Inc., welcomed committee members and guests to his city as the meeting was called to order on Monday morning. Mr. Cucullu added interest to the New Orleans visit by describing the host company system and by citing highlights in the background of this historical area. New Orleans Public Service dates back to 1833, with the company first being engaged in transit operations. Approximately 50 years after its organization, electrical activities were initiated.

In the absence of W. C. Beattie, Chairman, Air Pollution Subcommittee, T. O. Thompson presented the report of this group. Based on discussion at a special March 24 meeting, the subcommittee recommended that a literature survey on air pollution be undertaken jointly with the Power Station Chemistry Subcommittee's Air Pollution Section. As contemplated, such a study would provide current information on the detailed nature and status of this problem with particular attention being directed toward air pollution causes, reasonable performance standards or limits, and methods of measurement.

Turbine, Boiler Availability Study

V. F. Estcourt, Chairman of the Turbines & Condensers Subcommittee, reported on work underway on the subcommittee's annual turbine and boiler availability study. Consideration is being given to the possibility of having the data tabulated in conjunction with this study prepared by a commercial data processing organization. Such provision would substantially reduce the present delay in making this information available to the committee. Other projects underway by the subcommittee include a joint study with the Power Station Chemistry Subcommittee on turbine nozzle block erosion, a review of overnight and weekend turbine shutdown and start-up practices, and an investigation of optimum condenser sizes and design characteristics.

The Power Station Cost and Performance Data Subcommittee, under the Chairmanship of H. C. Schroeder, is compiling information on steam station operating costs submitted by members in response to a recent subcommittee questionnaire. It is anticipated that the results of this project will be available to the committee before the next meeting.

J. K. Bryan, Chairman of the Boiler Auxiliaries Subcommittee, reported that his group had reviewed a list of proposed research projects pertaining to the subcommittee's area of interest. These proposals were referred to the subcommittee by J. G. Miller who maintains liaison on behalf of Prime Movers Committee with the Institute's Research Projects Committee. One proposal in particular gives indication of some promise and is being considered further by the subcommittee.

In presenting the Metallurgy & Piping Task Force report, E. H. Krieg, Chairman of this group, recalled that EEI, on recommendation of Prime Movers Committee, based on study by the task force, had contributed to the Welding Research Council of the Engineering Foundation to assist in the financing of certain research projects under WRC sponsorship during 1960. The Institute has also on several occasions contributed to the foundation's Corrosion Research Council upon recommendations originating from the task force. These programs are followed closely by Mr. Krieg's group. On the task force's further recommendation at this meeting, the committee acted to recommend continued support of these two activities by EEI during 1961. In reporting for the task force Mr. Krieg also called attention to the activities of Dr. J. W. Freeman who serves as metallurgical consultant to the committee.

R. A. Baker, Chairman of the Boilers & Combustion Subcommittee, advised that his group plans to continue active study of cases involving boiler furnace explosions and will disseminate to Committee members information that will be of assistance in guarding against occurrences of this nature. The Boilers & Combustion Subcommittee closely follows the work of the ASME Power Boiler Subcommittee and since the last Prime Movers Committee meeting has studied a Boiler Code case submitted by the ASME Subcommittee for Prime Movers review.

I. B. Dick, Chairman of the Power Station Chemistry Subcommittee, reported on that group's 48th meeting, held in Philadelphia, April

11-13. Approximately 70 subcommittee members and guests attended the April meeting. Of particular interest in Mr. Dick's summary was reference to a study by the subcommittee's Corrosion Section of a tendency toward embrittlement failures in boilers operating on zero solids treatment. The Subcommittee's next meeting is scheduled for Sept. 26-28, in Chicago.

J. A. Lind, Chairman of the Power Station Data Subcommittee, noted that 11 power station data sheets have been received and processed for distribution to committee members since the last meeting. These include the first data sheet for a nuclear station. Mr. Lind's subcommittee provides Prime Movers Committee members with basic design data on new units installed by companies represented on the Committee.

M. D. Engle, Chairman of the Fuel & Ash Handling Subcommittee, reported that the results of a current fly ash study by this group will be available to the committee in the near future. This study is based on a questionnaire recently distributed to committee members.

The Power Station Structures & Facilities Subcommittee is jointly considering with the Power Station Chemistry Subcommittee's Cooling Tower Section an invitation to the EEI from the American Petroleum Institute Subcommittee on Corrosion to participate in the sponsorship of a research program on fungal deterioration of cooling tower lumber. F. F. Mautz is Chairman of the Power Station Structures & Facilities Subcommittee.

Under the direction of the Prime Movers Award Subcommittee, under the Chairmanship of J. N. Landis, an award administered by the ASME is conferred annually in recognition of outstanding contributions to the literature of thermal electric station practice or equipment. The fund, contributed to by Prime Movers members making this award possible, is increasing gradually, and the subcommittee anticipates that the present award, which consists of a certificate, may ultimately be supplemented with a medal or other suitable type of acknowledgment.

At this meeting, the committee, upon recommendation of its Executive Group, reactivated the Power Station Personnel Subcommittee. The subject of manning standby and old low-capacity use factor plants has given rise to renewed interest by the committee in this area. A. C. Pasini has been named Chairman of this subcommittee.

The Prime Movers Committee maintains liaison with a number of other Institute organizations by membership on joint subcommittees concerned with subjects in which the Prime Movers Committee has particular interest and by representation at meetings of other groups. A. J. Ormston reported on the April 24-27 meeting of the Institute's Accident Prevention Committee, at which he had represented the Prime Movers Committee. J. G. Miller, liaison representative with the Research Projects Committee, reported on that group's recent activities. J. D. Williamson, who with G. P. Wilson represents the Prime Movers Committee on the System Planning Subcommittee of the Electrical System & Equipment Committee, advised of the subcommittee's current program.

Each of the several research programs sponsored by the Institute, or to which EEI contributes on recommendation of the Prime Movers Committee, is directed by a steering group or followed by a liaison representative from the committee. Mr. Bice reported on the program of the ASME Research Committee on Corrosion & Deposits from Combustion Gases, and the High Temperature Steam Generation research program also under ASME sponsorship. J. G. Miller, Chairman of the Steering Committee of the direct conversion of energy to electricity project, under the joint sponsorship of the Prime Movers Committee and the Electrical System & Equipment Committee, reported on the status of this work. Mr. Miller advised that a preliminary report is expected during June. T. M. Hotchkiss who, with P. H. Hartung represents the Prime Movers Committee on the jointly sponsored EEI, AEIC, Bituminous Coal Research, Inc., program on sulphur removal from coal and flue gas contaminants control, reported favorable progress of this work. I. B. Dick, Chairman of the Power Station Chemistry Subcommittee, is maintaining liaison with a Prime Movers Committee research project involving a survey of the various water pollution factors which affect electric generating stations.

The committee was pleased to have in attendance C. E. Lewis, a former member who until his retirement several years ago, was with the Pennsylvania Power & Light Co., and E. C. Duffy, Senior Vice President, Long Island Lighting Co., who resigned from the committee in 1959.

During the afternoon of the second day committee members and guests toured the Inner Harbor Navigation Canal and the New Orleans Gulf Tidewater Channel aboard the yachts Good Neighbor (provided through the courtesy of the Board of Commissioners of the Port of New Orleans) and Porte Bonheur (courtesy Jahncke Services, Inc.) The boat trip terminated at the Michoud Plant of the host company, which was inspected by the committee.

Detroit Edison Opens Warren Service Center

THE multimillion-dollar rebirth of an obsolete industrial property has taken place with the creation of The Detroit Edison Co.'s Warren Service Center out of what was once the old Lincoln-Mercury manufacturing plant.

The Service Center project was undertaken by Detroit Edison early in 1956, shortly after the property was purchased from the Ford Motor Co. The 52-acre property includes seven major buildings with more than a million square feet of usable space.

Today, various Edison service operations formerly housed in locations throughout the city are being carried on in the new Center. Consolidation of some 40 warehouse, shop and other service groups in a step-by-step program directed by Edison Vice President G. A. Porter, is virtually complete.

Up to now, Detroit Edison has invested several millions of dollars to restore the property and put it to use in further improving the company's productivity. More than 1,000 men and women—representing nine Edison departments, Goodwill Industries and the League for the Handicapped —now are employed in Detroit Edison operations at the Center.

Conventions and Meetings

1960

July

21-22 EEI Industrial Relations Committee, Joint with Rocky Mountain Electrical League, Denver Hilton Hotel, Denver, Colo.

August

8-12 AIEE Pacific General Meeting, El Cortez Hotel, San Diego, Calif.

24 ECAP Copy Group Meeting, Denver, Colo.

September

1- 2 Street and Highway Lighting Committee, Salem, Mass.

7- 9 NELPA 53rd Annual Meeting, Glacier Park Lodge, Glacier, Mont.

7-10 Rocky Mountain Electrical League Annual Fall Conference, Hilton Hotel, Denver, Colo.

11-16 IES 1960 National Technical Conference, Penn Sheraton Hotel, Pittsburgh, Pa.

15-16 EEI-AGA Accounting Division and Section Organization Meetings, The Pittsburgh Hilton, Pittsburgh, Pa.

15-17 Public Utilities Association of the Virginias' 42nd Annual Meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

18-21 Meter and Service Committee, Westchester Country Club, Rye, N. Y.

21-22 PEA Annual Meeting, Penn Sheraton Hotel, Pittsburgh, Pa.

21-23 ASME-AIEE Power Conference, Bellevue-Stratford Hotel, Philadelphia, Pa.

21-23 Industrial Power and Heating Group, Milwaukee, Wis.

26-28 EEI Industrial Relations Committee 13th Annual Round Table Conference, Drake Hotel, Chicago, Ill.

27 BLBS Executive Committee, New York, N. Y.

27 ECAP Copy Group Meeting, New Orleans, La.

28-29 Southeastern Electric Exchange Accounting Conference, Tides Hotel, St. Petersburg, Fla.

28-30 Indiana Electric Association 51st Annual Convention, French Lick-Sheraton Hotel, French Lick, Ind.

29-30 PIP Workshop Conference, Sheraton Charles Hotel, New Orleans, La.

October

3- 4 PEA Systems Planning Committee, Erie, Pa.

3- 5 Prime Movers Committee, Benjamin Franklin Hotel, Philadelphia, Pa.

5- 7 Wisconsin Utilities Association Electric & Gas Sales and Operating Sections Convention, Schroeder Hotel, Milwaukee, Wis.

6 Power Survey Committee, EEI Headquarters, New York City, N. Y.

6- 7 PEA Electrical Equipment Committee, Philadelphia, Pa.

6- 7 Transmission and Distribution Committee, Sheraton Jefferson Hotel, St. Louis, Mo.

9-14 AIEE Fall General Meeting, Chicago, Ill.

10-12 AIEE National Electronics Conference, Chicago, Ill.

13-14 PEA Meter Committee, Altoona, Pa.

17-18 Electrical Systems & Equipment Committee, Hotel Northampton, Northampton, Mass.

20-21 Electric Council of New England 4th Annual Conference, Hotel Somerset, Boston, Mass.

20-21 Southeastern Electric Exchange Engineering & Operation Section, The Shoreham Hotel, Washington, D. C.

20-22 PIP Second National Youth Conference on the Atom, Museum of Science & Industry, Chicago, Ill.

22-26 Controllers Institute of America 29th Annual National Conference, Hotel Fairmont, San Francisco, Calif.

24-26 Insurance Committee, French Lick Sheraton, French Lick, Ind.

25-27 American Standards Association National Conference on Standards, Sheraton-McAlpin Hotel, New York, N. Y.

26-29 Rocky Mountain Electrical League Annual Meeting, Colorado Springs, Colo.

27-28 EEI Statistical Committee, The Homestead, Hot Springs, Va.

November

2- 4 EEI-AGA Taxation Accounting Committees, The Cloisters, Sea Island, Ga.

9-10 New Jersey Utilities Association Annual Meeting, Seaview Country Club, Absecon, N. J.

14-18 NEMA Annual Meeting, Traymore Hotel, Atlantic City, N. J.

15-16 Area Development Workshop, Park Plaza Hotel, St. Louis, Mo.

16-17 Pacific Coast Electric Association Administrative Services Meeting, Rickey's Studio Inn, Palo Alto, Calif.

16-18 Southeastern Electric Exchange General Sales Conference, Henry Grady Hotel, Atlanta, Ga.

17-19 Canadian Electrical Association Engineering Sections, Western Zone, Saskatchewan Hotel, Regina, Sask., Canada

18-22 Air-Conditioning and Refrigeration Institute Annual Meeting, Hollywood Beach Hotel, Hollywood Beach, Fla.

21-23 Canadian Electrical Association General & Sales Sections, Western Zone Palliser Hotel, Calgary, Alberta, Canada

27-Dec. 2 ASME Winter Annual Meeting, Statler-Hilton Hotel, New York City, N. Y.

28-30 Electronic Seminar, Atlantic City, N. J.

28-Dec. 1 NARUC Convention, Las Vegas, Nev.

30 ECAP Copy Group Meeting, New York City, N. Y.

December

8 EEI Industrial Relations Committee Roosevelt Hotel, New York City, N. Y.

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